ADDENDUM #3 PLEASE SEE CHANGES TO OPENING DATE, SECTION 3.8 POSTING OF ANSWERS TO SUBMITTED QUESTIONS

ADDENDUM #2 PLEASE SEE CHANGES TO ATTACHMENT A PRICING, OPENING DATE, SECTIONS 2.6.2, 2.8.1, 3.5.4, 3.6, 3.7, 3.8, PRE-PROPOSAL CONFERENCE LIST IS ATTACHED
RESPONSES TO WRITTEN QUESTIONS WILL BE INCLUDED IN ADDENDUM #3
ADDENDUM #1 – (DTD 1/29/07) SEE CHANGE TO MANDATORY PRE-PROPOSAL CONFERENCE DATE.

NOTICE OF SOLICITATION

SERIAL 06142-RFP

REQUEST FOR PROPOSAL FOR: GDACS – GEOSPATIAL ADJUSTMENT PROJECT

Notice is hereby given sealed proposals will be received by the Materials Management Department, Materials Management Center, 320 West Lincoln Street, Phoenix, Arizona 85003-2494, until 2:00 P.M./ARIZONA TIME on **March 30th ~~16th 2nd~~, 2007** for the furnishing of the following for Maricopa County. Proposals will be opened by the Materials Management Director (or designated representative) at an open, public meeting at the above time and place.

All Proposals must be signed, sealed and addressed to the Materials Management Department, Materials Management Center, 320 West Lincoln Street, Phoenix, Arizona 85003-2494, and marked **"SERIAL ~~06052~~ 06142-RFP REQUEST FOR PROPOSAL FOR GDACS – GEOSPATIAL ADJUSTMENT PROJECT ."**

The Maricopa County Procurement Code ("The Code") governs this procurement and is incorporated by this reference. Any protest concerning this Request for Proposal must be filed with the Procurement Officer in accordance with Section MC1-905 of the Code.

ALL ADMINISTRATIVE INFORMATION CONCERNING THIS REQUEST FOR PROPOSAL AND THE CONTRACTUAL TERMS AND CONDITIONS CAN BE LOCATED AT http://www.maricopa.gov/materials. ANY ADDENDA TO THIS REQUEST FOR PROPOSAL WILL BE POSTED ON THE MARICOPA COUNTY MATERIALS MANAGEMENT WEB SITE UNDER THE SOLICITATION SERIAL NUMBER.

PROPOSAL ENVELOPES WITH INSUFFICIENT POSTAGE WILL NOT BE ACCEPTED BY THE MARICOPA COUNTY MATERIALS MANAGEMENT CENTER

DIRECT ALL INQUIRIES TO:

LONNIE CUNICO
PROCUREMENT OFFICER
TELEPHONE: (602) 506-3243

THERE WILL BE A MANDATORY PRE-PROPOSAL CONFERENCE ON FEBRUARY 15, 2007 ~~FEBRUARY 8th, 2007~~ 10:00 AM AT THE MARICOPA COUNTY ASSESSORS DEPARTMENT 3rd FLOOR TRAINING/CONFERENCE ROOM, 301 W. JEFFERSON, PHOENIX, AZ 85003 – MARICOPA COUNTY ADMIN BUILDING 3rd FLOOR.

NOTE: MARICOPA COUNTY PUBLISHES ITS SOLICITATIONS ONLINE AND THEY ARE AVAILABLE FOR VIEWING AND/OR DOWNLOADING AT THE FOLLOWING INTERNET ADDRESS:

http://www.maricopa.gov/materials/advbd/advbd.asp

VENDORS MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM WITH THEIR BID

Signature: **Date:**

TABLE OF CONTENTS

NO RESPONSE

Respondents not responding to this Request for Proposal are asked to complete this document and return it to Maricopa County Materials Management Department, 320 W. Lincoln St., Phoenix, AZ 85003-2494 or fax to 602/258-1573.

MARK OUTSIDE ENVELOPE "SERIAL ~~06052~~ 06142 -RFP

Responses must be received **BY 2:00 P.M., MARCH 30th ~~16th~~ ~~2nd~~ , 2007**. Respondents failing to submit a proposal, or this document, may be subject to removal from the Maricopa County Materials Management Contractor List.

SERIAL ~~06052~~ **06142-RFP** TITLE: **GDACS – GEOSPATIAL ADJUSTMENT PROJECT**

CONTRACTOR NAME: _____

ADDRESS: _____

PHONE: _____ CONTACT: _____

REASON FOR NOT SUBMITTING A PROPOSAL:

_____ Insufficient time

_____ Do not handle product/service

_____ Other: _____

_____

_____

IMPORTANT

PLEASE READ BEFORE SUBMITTING YOUR PROPOSAL

M/WSBE CONTRACT PARTICIPATION

For this Contract a combined M/WSBE goal of 0% involvement is established for Minority/Women-Owned Small Business Enterprises (M/WSBE). This goal may be attained singularly or by any combination thereof to create the overall designated percentage involvement goal. Instructions and required forms are included in the Minority/Women-Owned Small Business Enterprise Program Contracting Requirements section. The Maricopa County Minority and Women-Owned Small Business Enterprise Program, revised June 14, 2000, is incorporated by reference

The Materials Management Department of Maricopa County will endeavor to ensure in every possible way that Minority and Women-owned Small Business firms shall have every opportunity to participate in providing professional services, materials, and contractual services to the Materials Management Department of Maricopa County without being discriminated against on the grounds of race, religion, sex, age or national origin. The Maricopa County Minority Business Program, effective January 1, 1992, is incorporated by reference.

Attachments D, E, and F provide detailed information and forms to be submitted as part of your proposal. If no goal has been set the attachments will be not be required to be submitted with the RFP.

THESE FORMS MAY BE LOCATED AT http://www.maricopa.gov/materials. M/WSBE PARTICIPATION FORMS.

REQUEST FOR PROPOSAL FOR: GDACS – GEOSPATIAL ADJUSTMENT PROJECT

1.0 INTENT:

Overview

Maricopa County, Arizona is soliciting proposals from qualified firms for the provision of adjusting existing GIS datasets. The County seeks to hire a single firm to adjust existing GIS features to the County's Geodetic Densification and Cadastral Survey (GDACS). The GDACS project generated survey level information for the County's section and quarter-section corners. The adjusted GIS features also need to overlay the County's orthophotography.

The selected Contractor will be expected to deliver, at a minimum, the adjusted GIS layers using proven methodologies in the formats specified by the County. The County sees this project as more than just rubber-sheeting existing GIS data to the section corner locations. The source materials will include the existing GIS layers, Assessor's Office parcel CAD drawing files for new land subdivisions, GDACS monuments, digital orthophotography and adjusted parcels from the City of Peoria. The City of Chandler has adjusted their parcel base, however, the County has not quality assured these parcels. The County anticipates that several methodologies will need to be used based on the existing GIS data and available source materials. This may include:

- Coordinate geometry (COGO)
- Adjust and rotate techniques
- Data transformation
- Rubber sheeting

The final delivery structure will be described in the section titled "Geospatial Adjustment Specifications". Data formats may include:

- MicroStation V8 dgn (Assessor's Office parcel base)
- ESRI shapefile
- ESRI personal geodatabase

The County currently uses several GIS/CAD software packages to maintain their GIS data. CAD software is used to create graphic features and exchange electronic drawings with the development community and the public. GIS software is used to create the necessary features and link to existing legacy databases. The GIS data is also available to the public via an Interactive Mapping web site. The software used by the County includes:

- ESRI's ArcGIS
- Bentley's MicroStation
- Autodesk's AutoCAD

Specific data delivery formats are specified in Table 3-1.

1.1 BACKGROUND

Maricopa County, Arizona is approximately 9,226 square miles and contains approximately 1.5 million tax parcels. The County stretches 103 miles from north to south and 132 miles east to west; it contains some 5,904,616 acres within its bounds. It is home to 24 municipalities, including Phoenix, Scottsdale and Mesa, with over 3.5 million people. Please refer to the Maricopa County web site for additional general County information, maps and statistics. The general Maricopa County web site is located at: http://www.maricopa.gov, GIS related map sites are located at http://www.maricopa.gov/assessor/gisPortal/gis_portal.asp .

1.2 CLIENT REQUIREMENTS OVERVIEW

The County completed a client requirements study to assist with developing this RFP. The client requirements study gathered information from the participating departments and focused on

accuracy requirements, data creation, use and maintenance, known registration issues with some existing GIS datasets. The following describes the project participants' requirements.

Maricopa County has developed numerous Geographic Information System (GIS) datasets over the past 10 years including parcels, street centerlines, land uses, zoning, various boundaries and other datasets. The County GIS team uses 18 foundational datasets on a daily basis. These foundational datasets were developed with the best available information at the time and may need to be adjusted to the County's Geodetic Densification and Cadastral Survey (GDACS) and orthophotography.

The County gathered information relating to adjusting the 18 foundational GIS datasets to GDACS and or the County's orthophotography. A consultant, RBF Consulting, was hired to interview the participating departments, identify client requirements and prepare data adjustment specifications. The result of this project is to select a firm to perform the necessary data adjustments based on the final client requirements and specifications. Please note: the consultant that assisted with preparing the client requirements and adjustment specifications is precluded from proposing on this RFP.

The participating departments included:

- Adult Probation
- Air Quality
- Assessor's Office
- Community Development
- Dept. of Transportation
- Elections
- Emergency Management
- Environmental Services
- Facilities Management
- Flood Control District
- Juvenile Courts & Probation
- Office of Management & Budget
- Parks & Recreation
- Planning & Development
- Public Health Services
- Sheriff's Office

The City of Peoria was also interviewed since they performed a parcel adjustment for their jurisdiction using the Assessor's Office parcel dataset. The City used a process similar to what the County departments desire. This involved using corner monuments, orthophotography, right-of-way data, engineering CAD files and others to develop a citywide parcel coverage. Based on field verification by City surveyors the citywide parcel coverage is at an accuracy of +/- 5 feet. The City of Peoria provided the adjusted parcels to the County Assessor's Office for inclusion in their countywide GIS parcel layer. The County wanted to better understand the adjustment methodology used by the City, take advantage of their knowledge and leverage the City's project to prepare the County's specifications. The County participants used the lessons learned by the City of Peoria when preparing the final specifications for this RFP.

The 18 foundational GIS datasets include:

- Airport runways
- City boundaries
- Countywide zoning (Assessors Office)
- Countywide zoning (Planning and Dev.)
- Golf course boundaries
- Map ID grid
- Parcels (Cadastral base)
- Parcel annotation
- Public lands
- Public parks
- Railroad centerlines
- Regional lakes
- Regional parks
- Sheriff office districts
- Sheriff office patrol beats
- Sheriff office report areas
- Subdivision boundaries
- Urban lakes

1.3 PARTICIPANTS NEEDS

1.3.1 DATA GATHERING

A project approach was developed allowing the Consultant to interact with County staff to identify their requirements and define the data adjustment specifications. The methodology included:

- Conduct a kick-off meeting
- Prepare survey forms for each department
- Perform department interviews
- Conduct a post-interview workshop
- Prepare the client requirements
- Conduct a client requirements workshop
- Prepare the final client requirements and adjustment specifications
- Prepare the remaining RFP documentation

A kick-off meeting was conducted with the participating departments. The kick-off meeting provided an opportunity for the project participants to meet the RBF Consulting staff, County's Project Manager, understand the project approach and schedule. The kick-off meeting consisted of a presentation of the project approach, schedule, review data gathering survey forms and discussions about spatial accuracy needs and concerns. Leads were also identified to represent each of the 16 participating departments. The leads were responsible to work with the County's Project Manager to setup interviews, provide required datasets, complete the survey forms and be the main contact for their department.

Survey forms were distributed to each department to collect specific information relating to the department organization, map and data creation, use & maintenance, existing map products, tabular and database products and existing hardware and software configurations. The survey forms provided background information on the County's 18 foundational GIS datasets and identified items to be discussed during the department interviews.

The interviews allowed the Consultant to meet with each department individually. Key members of each department participated in the interviews. The interviews provided an informal atmosphere to understand the needs and GIS products produced, identify spatial accuracy requirements and long-term GIS goals. Sample maps were provided by most participants' to better understand their mapping accuracy needs and the datasets used on a regular basis. The interviews were conducted over a three-week period based on staff availability.

Following the department interviews a workshop was conducted allowing the Consultant to review their findings with the project participants. The workshop provided an opportunity for the group to understand the information provided on the survey forms and during the department interviews. The workshop was also used to openly discuss the spatial accuracy requirements and general GIS registration issues. The parcel layer is the basis for many other layers and the group determined the parcel spatial accuracy needs to be at a level where the parcels snap to the GDACS section corner monuments and overlays the orthophotography correctly.

1.3.2 DEPARTMENT INTERVIEWS

The following is a list of the project participants and summaries of the department interviews. The summaries include the major items relating to the GIS data adjustment project. Related GIS management issues will be discussed in the section titled "General GIS Program Issues". The following departments staff participated in the department interviews. Titles of those that participated are also given to provide further representation participatory parties:

Adult Probation
Lead Business Analyst

Air Quality
Air Monitoring Data Coordinator
GIS Data Analyst

Assessor's Office
GIS Manager
Sr. GIS Technical Consultant
GIS Analyst

MCDOT
Acting Survey Manager

Environmental Services
GIS Coordinator

Flood Control District
GIS Database Manager
MCDOT GIS Lead
GIS Services Branch Manager
GIS Manager

Juvenile Probation
Senior Research Analyst

Parks and Recreation
GIS Technician

Planning and Development
GIS Programming Analyst
GIS Analyst

Regional Development Services
Technology Director

Emergency Management
GIS Programming/Analyst

Public Health
Senior Epidemiologist
Epidemiologist

Elections
GIS Manager
GIS Technician

Sheriff's Office
GIS Database Manager
CAD Coordinator

Facilities Management
IT Manager
Senior Planner

City of Peoria
GIS Coordinator

1.3.3 INTERVIEW SUMMARIES

ADULT PROBATION

Adult Probation supervises probationers that are sentenced to probation by the Superior and Justice Courts. They also complete pre-sentence reports that are used by Judges to sentence defendants that are adjudicated in Superior court. GIS is being used to locate probationers categorized by crime type. Street centerlines and parcels are used to locate individual cases and prepare maps supporting internal probation staff. Probationer data is provided to the cities as a flat file for use in their databases. The site addresses in the parcel file is used for preparing detailed reports. Sex offender density analysis is performed to meet State requirements for re-locating individuals based on geography.

Most of the 18 foundational GIS layers are used to help prepare maps for staff and special projects. Several layers are needed to better support Adult Probation activities including:

- School locations
- Hospital locations
- Treatment Provider Locations
- City boundaries
- Park locations or boundaries
- Police & Fire station locations
- Shopping malls and plazas
- Bus routes

AIR QUALITY

The Maricopa County Air Quality Department is a regulatory agency whose goal is to ensure federal clean air standards are achieved and maintained for the residents and visitors of Maricopa County. The department was created as a self-operating unit in November 2004 when the department separated from Environmental Services.

GIS is primarily used in two divisions, Dust Compliance and Air Quality Compliance. Dust Compliance and Air Quality Compliance perform site inspections and violation issuance. GIS is used to track inspections and locate violations based on citizen complaints and field staff reports. Maps are created supporting inspection staff. Base maps are prepared using many of the 18 foundation layers. Department specific information such as inspections and violations are geo-coded and displayed on the maps. Presentation quality maps and graphics are prepared supporting management reports and seminars. The Elections street centerline file is used for geo-coding tasks.

New construction and trails are mapped to support dust inspections. Air quality monitoring stations are generally located based on the closest intersections.

ASSESSOR'S OFFICE

The Assessor's Office is responsible for maintaining the cadastral maps and related GIS layers for the county, which support property valuations and taxation. Their duties range from assigning parcel numbers for new subdivisions to in-depth spatial analysis in support of computer aided mass appraisals (CAMA). Responsibilities include:

- Timely and accurate assignment of Assessor's Parcel Numbers (APNs) for all new land subdivisions.

- Timely and accurate capture of all new subdivisions in a digital format. They are responsible for producing a digital CAD drawing of all new subdivisions for use by the public and internal appraisal staff.

- Prepare assessor parcel maps that are a representation of parcel features.

- Timely and accurate capture of all land splits in a digital format.

The Assessor's parcel data is widely used as a base map by other County departments, Cities, other government agencies, engineering and land planning companies, land developers, real estate professional and the general public.

The GIS parcels have been developed from hardcopy drawings dating back to the early 1950's. The source materials for the parcel base consisted of developers' engineering CAD drawings, and recorded documents such as deeds, plats, and surveys. The positional accuracy of the parcels ranges from very good in new subdivisions to poor in older areas where good survey control was not available. For the past several years, staff has integrated COGO'd subdivision plats obtained from developers' engineered plats (CAD) drawings. These drawings are believed to be of a high accuracy and it is anticipated that they will be placed as is and rotated, if necessary, without great adjustment.

The Assessor's Office wants to develop a consistent parcel layer that overlays the County's orthophotography and ties to the GDACS section and quarter section monuments.

The GIS parcels contain the topology and the Assessor Parcel Number (APN) allowing parcel characteristics stored in the Assessor' Secured Master Database (Oracle) to be easily linked to the GIS through the Property Information Management Systems (PIMS, Oracle Spatial and ESRI's SDE).

The Assessor's Office also maintains an Internet mapping site allowing the public access to the cadastral base information. This site is highly used by County staff, engineering companies, land planners, real estate community and the public.

COMMUNITY DEVELOPMENT

Community Development elected not to participate in the department interviews since they do not use GIS data to manage their programs. The following is a description of services from Community Development.

Community Development administers two grants from HUD; Community Development Block Grants (CDBG) and HOME funds. Community Development is also the lead agency for the Maricopa HOME Consortium which is comprised of all the cities within Maricopa County that are entitlements and have a population greater than 50,000. Census tracts are used when funds are expended for "area benefit projects".

DEPARTMENT OF TRANSPORTATION

The Maricopa County Department of Transportation (MCDOT) creates many GIS layers supporting road construction and maintenance activities, rights-of-way acquisition and roadway design. MCDOT also developed the Geodetic Densification and Cadastral Survey (GDACS) for the county. GDACS provides the fundamental control layer for developing GIS data in the County.

MCDOT maintains a street centerline file based on engineering and survey information for the County. Many departments use the MCDOT street centerlines as their street network for preparing maps. MCDOT also conflates the address information contained in the Elections street centerline file to maintain current address ranges. The MCDOT street centerlines have been ground verified for positional accuracy.

MCDOT uses the Assessor's parcel data for identifying land ownership for rights-of-way acquisition, roadway construction and maintenance projects. MCDOT works closely with the Flood Control District of Maricopa County (FCDMC) for GIS related activities. MCDOT also maintains an Interactive mapping site allowing the public access to the GDACS survey control and corner monument information.

ELECTIONS

Elections Office creates and maintains many GIS layers supporting election activities and other County departments. This includes a countywide street centerline layer. The Elections street centerline layer is accepted as being the most current as related to address ranges and used by many departments for geo-coding activities and creating regional maps. The Elections street centerline file was tied to the GDACS section and quarter-section monuments approximately 4 years ago. The street centerlines were digitized from the County orthophotography, cities provided centerline information and Assessor's Office provided CAD drawings. Many of the 18 GIS foundational layers are used by Elections to prepare maps.

Elections creates the following GIS layers:

- City boundaries
- Fire Districts
- School Dist Boundaries
- Justice Precincts
- Voting Precincts
- Zip Code boundaries
- Other boundaries pertaining to election cycles.

EMERGENCY MANAGEMENT

Emergency Management coordinates response and recovery activities through implementation of emergency response plans during and after emergencies. Implementation requires the support and assistance of many other county departments, local jurisdictions, the private sector and volunteer agencies. They have been using GIS for several years to support all aspects of their operations. They have access to hundreds of spatial databases and aerial photography. GIS is used to perform hazard analyses before an incident, as a response tool providing an integrated view of an incident in the Emergency Operations Center (EOC), and as a tool to aid post-disaster recovery efforts.

Emergency Management needs access to many departments' GIS data when responding to specific incidents. Maps and map displays are needed to assist County Management with getting the best available information to make vital decisions quickly. The Elections street centerlines and city boundaries along with the Assessor's parcels are used as foundations for many Emergency Management maps. Planning and Developments zoning data is used to assist with locating potential hazardous materials sites supporting the Local Emergency Planning Committee (LEPZ).

ENVIRONMENTAL SERVICES

The Environmental Services Department is responsible for the health and safety of the community. It is the Department's goal to prevent and remove environmental risks. The Vector Control office was interviewed which is part of the Water and Waste Management Division. Vector Control staff investigate citizen complaints dealing with mosquitoes, flies and non-native rodents. They also enforce and ensure compliance of the Maricopa County Environmental Health Code.

Vector Control inspectors identify routine breeding sites and apply the appropriate treatments. They perform surveillance activities in their "districts" to identify new or potential breeding sites. They also work in conjunction with State officials in monitoring and testing of mosquito samples that are collected on a monthly basis and tested for arboviruses.

The Vector Control Management System (VCMS) supporting inspections and treatment activities uses GIS for screen displays and preparing maps. The VCMS system allows data to be collected real-time for each inspection using GPS and standard forms. The inspector can log specific information for each inspected trap or describe the type of treatment applied to a green pond or other potentially infected area. The data is downloaded to the GIS database daily. Using this data along with the TeleAtlas street centerlines fogging maps, routes and schedules can be created. The VCMS system also tracks citizens that are chemically sensitive. A file is created and uploaded to a web site where each chemically sensitive person within the area to be fogged is notified via voicemail.

Vector Control creates the following GIS data:

- Trap locations
- Treatment history
- Workload boundaries
- Fogging routes

FACILITIES MANAGEMENT

Facilities Management provides services to maintain County-owned and several County-leased buildings. They provide management of design and construction activities for new construction and renovation of existing County facilities. The Capital Facilities group within Facilities Management maintains GIS data for County-owned buildings including a point location file linked to a database for each building and building floor occupied by County staff. They also maintain CAD drawings for each building and specific building floor. They need access to the foundational GIS layers to create location and general purpose maps for reports, scopes of work and other documents.

They would like to set up an intranet site allowing county staff access to building location information using a map or database search. The current GIS point file could be expanded to contain building footprints that can be linked to the CAD plan sets.

Facilities Management creates the following GIS data:

- County Building locations

FLOOD CONTROL DISTRICT

The Flood Control District of Maricopa County provides regional flood hazard identification, regulation, remediation, and education to County residents. This reduces the risks of injury, death and property damage caused by flooding, while still enjoying the natural and beneficial values served by floodplains.

For 30 years, the District's focus revolved around the design and installation of flood control structures. However, by 1990, approximately 70 structures had been installed, and the District's focus moved to operations and maintenance and non-structural solutions.

The District uses GIS daily to support their operations. They use most of the 18 foundational layers for making maps and completing analysis. The District also maintains their own GIS layers relating to floodways, structures, maintenance and management activities. The Districts GIS layers were based on surveys, engineering drawings and recorded documents and meets their accuracy needs.

FCDMC also maintains an Internet mapping site allowing the public access to flood related information including:

- 100 year FEMA floodplains
- Elevation certificates
- MCDOT GDACS
- Digital Terrain Models
- View & Purchase Historical Aerial Photography
- Current Digital Orthophotography (1999-2006)

JUVENILE PROBATION

The Maricopa County Juvenile Probation Department works to achieve their mission of making a positive difference in the lives of children and the community. On any given

day probation officers (PO's) supervise approximately 4,400 juveniles on Standard Probation and 290 juveniles pending a disposition hearing. Information Technology staff operate and program computer systems, produce statistical and management reports, purchase equipment and supplies and secure grant funds. GIS is used as a tool supporting analysis tasks and preparing maps assisting probation officers.

The Elections and MCDOT street centerline files are used as a general purpose base map. The maps are used to track child locations. GIS layers needed to support analysis tasks include:

- Census tracts, block groups
- Assessor's parcels
- Zip code boundaries
- School districts
- Attendance zones
- Political boundaries
- City boundaries
- Demographic data from State and Federal government agencies

PARKS & RECREATION

Parks and Recreation prepares maps supporting staff needs and the public. Numerous maps are prepared for public distribution using many of the 18 foundational GIS layers. Map products include:

- Parks brochure map
- Trails maps
- Small color maps for County web site
- Black & White maps for park kiosks
- Large color maps for Lake Pleasant
- Lake Pleasant color brochures
- Visitor center wall maps
- Regional trails maps for published reports
- Internal project specific maps

The Assessor's Parcels are the basis for developing many of the Parks and Recreation maps. Trails are digitized from the County orthophotography and GPS locations gathered by field staff. Parks and Recreation are responsible for creating and maintaining the following GIS layers:

- Regional park boundaries
- Regional lakes for Lake Pleasant only
- Regional trails
- Roads within County parks
- Regional park trails

PLANNING & DEVELOPMENT

The Planning & Development Department provides market competitive planning and development services to constituents of unincorporated Maricopa County so they can responsibly develop and enjoy real property. The department provides a one-stop shop for citizens relating to land planning efforts. They also receive changes to several foundational GIS layers based on zoning applications. The data is collected in Planning and Development and then sent to MCDOT, Assessor's Office and other departments for review.

GIS is used supporting the review of zoning applications, annexations and land uses. Planning and Development's uses the 18 foundational GIS layers to support their efforts.

The Department also maintains an Internet Mapping Site known as "PlanNet" allowing the public access to specific GIS layers. They also create several GIS layers including:

- City boundaries
- County zoning
- General Plan land use
- Annexations
- Planning areas
- Case layer (shows pending zoning petitions)
- Noise contours
- Permits

The zoning layer is based on the Assessor's parcels and modified based on re-zoning applications. Multiple zoning classifications can exist for an individual parcel. This causes Planning and Development staff to maintain their version of the parcel data instead of linking a zoning table to the Assessor's parcel GIS layer.

Regional Development Services is reviewing techniques to reduce the plan review process. GIS may play a key role if the parcel and zoning layers are spatially consistent and provide an accuracy level to measure lot dimensions, setbacks, etc. The goal is to automate as much of the review process as possible to verify the land information shown on re-zoning applications.

PUBLIC HEALTH SERVICES

The goal of public health is to promote, preserve and protect the health of the public. The Office of Epidemiology uses GIS to geocode information relating to births, deaths and infectious disease. Databases, location maps and rate maps are maintained to assist staff with their analysis. Health status areas are also created based on demographic information, disease, births and deaths. Public Health uses spatial analyst to assist with West Nile virus detection and disease control activities. The foundational GIS layers are used to assist with map preparation including regional, areas and neighborhood maps. Health Status areas are created, which are small areas of concern that can be aggregated to form larger areas for regional analysis. The street centerlines are used as the basis for the regional and large area maps. The Assessor's parcels are used when creating detailed maps.

SHERIFF'S OFFICE

The Maricopa County Sheriff's Office (MCSO) uses all of the 18 foundational layers to prepare standard and custom maps supporting a wide range of activities. The maps provide Deputies, Special Projects Division, Detectives, Search and Rescue, EOC and MCSO's decision makers with tools to assist with their activities. Commonly requested maps include the MCSO's individual Districts, Beats and Reporting areas. They also receive requests to prepare maps supporting crime analysis using data from the Computer Aided Dispatch (CAD) system. In partnership with the Maricopa County's Regional 911 Center, they assist with maintaining the County's Regional 911 street centerline file, which is mandated by Homeland Security for each of the County's 26 law enforcement agencies. The Phoenix Fire Department is the responsible agency to perform updates to the Regional 911 street centerline GIS layer. The addresses in the Regional 911 street centerline are consistent with the dispatching database.

The Regional 911 street centerline file is updated using information shown on the other street centerline files used in the County including:

Elections MCDOTAssessors OfficeGIS data is also maintained for the GDI Tools system, which integrates the CAD system with the GIS to geographically locate incidents. The GIS data used by the GDI system include the Regional 911 street

centerlines, MCSO's modified city and county boundaries, Sheriff Districts, Beats and Reporting Areas. The GDI system Tools system only accepts data as ArcInfo coverages.

Specific GIS layers created and maintained by the Sheriff's Office include:

- Patrol beats
- Districts
- Reporting areas
- Geo-coded incidents

GIS INVENTORY

The following datasets were inventoried during the department interviews:

Data Theme	Responsible Department	Data Type
Sheriff Office Patrol Beats	Sheriff's Office	Polygon
Sheriff Office Districts	Sheriff's Office	Polygon
Sheriff Office Reporting Areas	Sheriff's Office	Polygon
County-owned Building Locations	Facilities Management	Points
Voting Precincts	Elections	Polygon
Zip Code Boundaries	Elections	Polygon
Street Centerlines	MCDOT, Assessor's Office, Elections, Phoenix Fire Dept.	Lines
Census Tracts, Block Groups and Blocks	Various Depts use	Polygon
Probation Cases	Adult and Juvenile Probation	Points
School District Boundaries	Elections	Polygon
GDACS Survey Monuments (section & quarter-sections)	MCDOT	Points
GDACS Survey Control	MCDOT	Points
Section Lines	MCDOT	Lines
Air Quality Monitoring stations	Air Quality	Points
County Park Boundaries	Parks & Recreation	Polygon
County Park Facilities	Parks & Recreation	Polygon
County Trails	Parks & Recreation	Lines
Regional Lakes	Parks & Recreation	Polygon
Airport Boundaries	Planning & Development	Polygon
Mosquito Control Traps & Chemical Sensitive People locations	Environmental Services	Points
Department specific districts for coordinating field staff & work orders	Environmental Services	Polygon
Parcels including annotation and dimensions	Assessor's Office	Polygon
Subdivision boundaries	Assessor's Office	Polygon
Map ID grid	Assessor's Office	Polygon
Special Districts	Assessor's Office	Polygon
City boundaries	Planning & Development	Polygon
Planning & Development zoning	Planning & Development	Polygon

GEOSPATIAL ACTIVITIES

Based on the department interviews common geospatial activities were identified. A common activity is one that uses similar resources in the form of data, skills and technology. The intent was to review how the 18 foundational GIS layers are being used to assist with determining project participants spatial accuracy requirements. The following is a list of common geospatial activities among the project participants:

- Use or Maintain parcel and ownership information
- Review zoning applications
- Prepare map products at various scales for public distribution
- Develop datasets for on-line MapGuide web sites
- Develop datasets for County staff use
- Provide datasets to public
- Generate point features for department specific events
- Use census data for analysis
- Work with other agencies to maintain specific datasets (i.e. zipcode boundaries, city limits, etc)
- Perform analysis using GIS data (i.e. ROW acquisition, zoning plan review, environmental monitoring, etc.)

1.4 SPATIAL ACCURACY REQUIREMENTS

DATA ADJUSTMENT ISSUES

Information was compiled from the survey forms, department interviews and workshops to identify spatial accuracy requirements. The intent was to reach a group consensus of the accuracy needed to support the participating departments activities. The other issue was to understand the trade-offs of possible adjustment accuracies as related to GIS activities, budget constraints and future data maintenance tasks. The project participants identified the following accuracy requirements.

- The parcels need to overlay the County's orthophotography correctly
- The parcels need to snap to the GDACS section corner monuments
- Parcel lines in areas where GDACS section and quarter-section monuments exist need to be at an accuracy of +/- 1 foot
- Parcel lines that are common to a GDACS section or quarter-section corner monument need to be at an accuracy of +/- 1 foot
- The County desires the parcels to be at an accuracy of +/- 5 feet or better for areas that lack GDACS corner monuments
- Different parcel adjustment methodologies are needed based on the survey control used on the original GIS conversion
- Need to create an attribute field to store the adjustment method supporting future data maintenance
- Perform the parcel data adjustment on a section basis and edge-match data between sections, townships and book boundaries
- Planning & Development maintains a zoning layer based on the Assessor's parcels but modified using the information shown on zoning applications
- The City boundary layer needs to be adjusted following the adjustment of the parcels
- The street centerline layer within the Assessor's cadastral GIS files shall be adjusted in relation to the parcel base. The street centerline files maintained by other departments do not need to be adjusted.
- Each department will be responsible to ensure the acceptable quality criteria for their respective datasets are met and QC tasks are completed in a timely manner.
- Topology shall be correctly maintained with no dangles, over-shoots, multiple short segments, etc.

1.5 PROTOTYPE PROJECT RESULTS

A prototype project was conducted to test the specifications and several adjustment methods for Pilot Area 1 (refer to figure 3-3 for a graphic of Pilot Area 1). The prototype provided project participants an opportunity to review possible data adjustment outcomes and better understand the adjustment process.

1.5.1 DATA LAYERS INCLUDED

The prototype was completed using the existing County 2006 orthophotography, GIS data and GDACS corner monuments for Pilot Area 1. This area was selected because it represented many of the issues that will be encountered across the County. The existing GIS data was provided as a clipped shapefile for the entire pilot area, which consisted of 12 adjoining sections. The prototype used the existing Assessor's Office GIS layers including:

- Parcels (shapefiles)
- Parcel text (dgn file)

1.5.2 ADJUSTMENT PROCESS

An evaluation of the existing GIS data was conducted to see how the features fit the orthophotography and GDACS corner monuments. Based on this evaluation the data was separated into individual section shapefiles to begin the data adjustment process. The prototype was completed using the spatial adjustment tools within ArcGIS. This, by no means, is the exact process that has to be used when performing countywide adjustment tasks. This was a method to adjust the existing GIS data and verify the County's accuracy requirements can be achieved.

The adjustment process involved the following:

- Setup an ArcGIS environment
- Create a point shapefile of the GDACS corner monument data
- Clip existing GIS data to individual sections
- Create spatial adjustment links
- Perform adjustment
- Review adjustment outcome
- Modify links
- Re-adjust where necessary
- Save final adjustment
- Save final links to an external file
- Adjust associated layers using the saved links

The first task in the data adjustment process involved setting up the proper ArcGIS environment. This involved loading the data into a directory structure suitable to performing the adjustment tests. The 2006 orthophotography (approx. 700 mb) was loaded into an image directory allowing the technical staff easy access to the imagery. The GDACS corner monuments were provided as an Excel spreadsheet and converted to a point shapefile file using the northing and easting State Plane coordinates. The shapefile also maintained the descriptive attributes contained in the spreadsheet. Once the orthophotography and GDACS corner monument framework was created the adjustment process was ready to begin.

The remaining tasks involved clipping the existing GIS data into smaller areas such as sections. Using the spatial adjustment function, links and identity points were created for each section. Generally 8-50 links were needed to perform the adjustment. The links were saved to an external link file so they could be used for associated GIS layers such as the parcel text.

Different techniques were used to adjust the existing GIS data including:

- Transformations
- Rubber-sheeting
- Adjust & Rotate

Several different functions were used to test the adjustment including transformations and rubber-sheeting. We found the Affine Transformation provided the best results. This function allowed the relationship of the parcel geometry to remain intact. We found rubber-sheeting tended to change the shape of individual parcel lines from the original file resulting in parcels that did not conform to the original parcel lines.

Pilot Area 1 had one section that represented a new subdivision where the existing parcels only needed to be adjusted and rotated to correctly overlay the orthophotography. An Affine Transformation was then used to adjust the parcels to the GDACS corner monuments.

1.5.3 SPECIFIC AREA ADJUSTMENT DETAILS

The following describes how the adjustment was performed for Pilot Area 1 sections containing significant GIS data. The following sections were included in the prototype:

- Township 5N Range 2W Section 35
- Township 5N Range 1W Section 31
- Township 4N Range 1W Section 6
- Township 4N Range 2W Section 3
- Township 4N Range 2W Section 10
- Township 4N Range 2W Section 11

Township 5N Range 2W Section 35

This area represents a new subdivision being constructed, the orthophotography shows the roadways are in the process of being graded. The parcels in this new subdivision were adjusted using the graded roadwork shown on the orthophotography and the right-of-ways shown on the existing parcels. Links were generally added at road intersections, which provided the best fit based on the natural features visible on the orthophotography. Links were also added where parcels are common to a GDACS section or quarter-section corner monuments. The challenge of adjusting this section was not having a paved roadwork when creating adjustment links. This section required 2-3 different adjustments to achieve the +/- 5 foot accuracy requirement. The adjustment method that worked the best for this area was an Affine Transformation using approximately 10 links.

Township 5N Range 1W Section 31 & Township 4N Range 1W Section 6

These two sections presented a challenge to adjust the existing GIS data due to a lack of features shown on the orthophotography. This area represents a rural residential neighborhood and has only a few paved roads and physical features to assist with the adjustment. We used the available GDACS corner monuments to adjust these sections.

These sections required approximately 50 links to be established and 4 adjustments were executed. Most of the parcels overlay the orthophotography and match the GDACS corner monuments. There are a couple of areas where additional information would need to be provided to meet the +/-5 foot accuracy requirement. The adjustment method that worked the best for this area was an Affine Transformation using 50 links.

Township 4N Range 2W Section 3

The adjustment for this section used the one roadway feature shown on the orthophotography and the GDACS corner monuments. This area represents a rural residential area and has a large right-of-way (120') along the south side. The right-of-way was used to control the parcels for that portion of the section. The GDACS corner monuments were used for the remaining portions of the section. The best adjustment was achieved using an Affine Transformation with 10 links.

Township 4N Range 2W Section 10

This section needed to be divided into quarter sections in-order to achieve an adjustment meeting the County accuracy requirements. This section represents a rural residential area with visible fence lines that delineate property boundaries. The fence lines were used as a guide when performing the parcel adjustment. Road intersections were the primary feature to place links for the adjustment. The best adjustment was achieved using an Affine Transformation with 8 links for each quarter-section. Following the quarter-section adjustments the section was re-assembled and edge-matching was performed.

Township 4N Range 2W Section 11

The parcels for Section 11 were added to the Section 10 shapefile since parcels only existed in the west half of Section 11. This allowed one adjustment to be performed for the area and eliminated the need to perform edge-matching tasks.

1.5.4 LESSONS LEARNED

The prototype was conducted to test the adjustment specifications and demonstrate to the project participants what kind of results can be expected. Based on the information gained during the prototype several items were identified that are important when performing the countywide adjustment tasks. The adjustment should be performed on a section basis. This allows any error to remain within a specific section or smaller area. Some sections may need to be further divided into smaller areas to achieve the desired adjustment results. Areas where new land subdivisions exist, the available CAD drawings should be placed and rotated first to fit the orthophotography and GDACS corner monuments, then proceed with less accurate sources. This process provided the best fit and eliminated the possibility of inducing error into areas where good quality data was available.

Within ArcGIS different techniques were used to perform the data adjustment including transformation, rubber-sheeting and adjust & rotate. The adjust & rotate worked best for the available CAD drawings. Other less accurate sources, the Affine Transformation with 10-25 links worked the best. Several sections had to be adjusted 1-3 times to achieve the desired results. Edge-matching functions were used to re-assemble the adjusted data to meet the cartographic requirements. When performing edge-matching we had a few instances where we had to reshape polygons to achieve the desired cartographic representation. These were generally minor and did not affect the overall accuracy of the data.

Another challenge following the adjustment of the line and polygon features, was the adjustment of the associated text features. We found the adjustment functions did not always adjust the text the same as the line or polygon features. The angles of the text in a few instances had to be interactively modified by a GIS technician to achieve the proper cartographic representation.

PLEASE SEE EXHIBIT 3 FOR ADJUSTMENT RESULT IMAGES

2.0 SCOPE OF WORK:

GEOSPATIAL ADJUSTMENT SPECIFICATIONS

This project involves the adjustment or re-registration of several existing GIS layers shared by many County departments. The intent is to complete the adjustment with the least amount of disruption to normal GIS data maintenance activities. The GIS layers will be adjusted using the County's Geodetic Densification and Control Survey (GDCAS) corner monuments. The adjusted data also needs to overlay the County digital orthophotography correctly supporting map production.

GDACS DESCRIPTION

The Maricopa County Department of Transportation (MCDOT) developed the Geodetic Densification and Cadastral Survey (GDACS) Project. The goal of the GDACS project was to provide an accurate surveyed base grid for development of a countywide shared GIS system. This project included using GPS to perform a dependent resurvey of the Public Land Survey System (PLSS) Monuments within the Townships including section and quarter-section monuments. This involved extensive research of existing survey records, analyzing monument location information and record information, determining a surveyed location for each PLSS corner and replacing or upgrading corner monuments. This was accomplished by using GPS measurements, recording each resulting Township survey plat, and delivering a monument database complete with location, description, corner determination notes and photos of the corner monuments to the County. For additional information on GDACS please refer to the Maricopa County web site at:

http://www.mcdot.maricopa.gov/survey/home.htm

COUNTY ORTHOPHOTOGRAPHY

The Flood Control District of Maricopa County has been managing the County's orthophotography program. In 2005 the County acquired digital color orthophotography for the metro area at a pixel resolution of 0.8 feet. In 2006 the County acquired new digital color orthophotography allowing staff to keep up with the rapid growth in Phoenix. The 2006 orthophotography is at a pixel resolution of 0.32 feet for most of the metropolitan area and 0.8 pixel resolution for the remaining rural areas of the County. The 2006 orthophotography has been delivered for portions of the Phoenix metro area. If the 2006 orthophotography is not available for an area prior to starting the GIS adjustment project the Contractor will be provided with the 2005 or earlier orthophotography. The County's orthophotography was controlled using the GDACS control network and is suitable for 100 scale mapping. The County's orthophotography can be viewed on the County web site at:

http://www.maricopa.gov/assessor/gis

The County's orthophotography can be viewed on the GIS web site at a scale of 1" = 2,500' or closer.

The existing County GIS data is in the Arizona State Plane Coordinate System, NAD83, Central Zone, Units in US feet. Please note that **International Feet** are required for the project deliverables. All digital map data produced under this project will need to be delivered in this coordinate system.

GENERAL INFORMATION

The Assessor's Office cadastral maps were originally produced in the early 1950's as graphic representations (paper) of properties created from recorded deed, plats, and surveys. These were based on the standard township-range-section geography, using a standard section of 5,280 square feet. In the late 1990's the Assessor's Office completed a conversion project from hard copy paper maps to MicroStation CAD files and ESRI GIS shapefiles countywide. The conversion project used available survey ground control, hard copy maps, digital COGO'd engineering drawings and other sources to develop the GIS parcel layer. The completion of the County's GDACS ground control network project was not available until after the completion of the Assessor' conversion project. The completion of the GDACS project provides an opportunity for the County to perform a parcel adjustment based on solid survey control.

The Assessor's Office maintains their parcel data by section map in different software formats including ESRI shapefiles and MicroStation V8 dgn files. A section map roughly relates to a section of land in the Public Land Survey System (PLSS). The Assessor tries to keep new subdivisions together causing some section drawings to be larger than a PLSS section. The daily maintenance to the parcel geometry is completed in the
MicroStation CAD files. The current process to maintain the parcel layer generally involves the following:

- Translate external AutoCAD drawings into MicroStation .dgn files
- Update MicroStation CAD files with new linework and text
- QC modifications to individual section drawings
- Generate Assessor Parcel Numbers (APN) for each polygon

- Validate APN's in GIS files with County Secure Master Database using Property Information Management System (PIMS)
- Make any necessary corrections
- Generate final GIS files for staff and the web site
- Create plot files for paper map output

This process allows County staff to easily use provided CAD files from engineering and survey companies to assist with maintaining the countywide parcel layer. The existing GIS parcel layer has been developed using several sources to develop features as accurate as possible. The sources used include:

- Recorded deeds, plats and surveys
- Subdivision drawings from engineering companies
- COGO'd land parcels
- Parcels adjusted and provided by several cities
- COGO'd and/or digitized parcel splits
- Digitized parcels

2.1 GIS DATA ADJUSTMENT SCOPE

The proposed GIS data adjustment scope should include the following:

- Project initiation/work plan/communications plan
- Pilot project
- Countywide production
- Quality control (including correction process and plan)
- Resumes of key team members

The Contractor is asked to provide a real time demonstration of their adjustment methods and techniques for a small geographic area during the final presentation. The County will provide the necessary datasets for the demonstration area.

The Contractor will need to develop their production schedule in coordination with the Assessor's Office daily splits and mapping production.

The Data Adjustment project needs to include a surveyor to oversee the proposed process and ensure adjusted data meets the County's accuracy requirements. The selected Contractor will be expected to deliver, at a minimum, the adjusted GIS data in the formats described in Table 3-1. Conversion methods can involve using other digital mapping formats and technologies as long as the final County delivered data is in the format specified in Table 3-1.

Table 3-1

Layer to be Adjusted	**Delivery Format**
Assessor's parcels	ESRI shapefile & MicroStation V8
Assessor's parcel text	ESRI shapefile & MicroStation V8
Assessor's subdivision boundaries	ESRI shapefile & MicroStation V8
Planning & Development zoning	ESRI shapefile
Planning & Development annexations	ESRI shapefile
Planning & Development city boundaries	ESRI shapefile

The County desires to adjust the existing GIS data on a section by section basis and achieve the best available adjustment based on the available source data. The final delivered GIS data structure including feature types, topology and attribute requirements will be based on the County's GIS standards and conversion methodology agreed upon collectively by the County and the selected Contractor. The Contractor will also need to be available to perform corrections to the adjusted data based on the County's quality and acceptance testing.

The Contractor shall provide any programs and/or scripts created for this project that will assist the County with future data maintenance and QC tasks. If creation/provision of the maintenance program/scripts involves a third party, all associated costs to Maricopa County and any other pertinent information should be provided in the applicant's response as separate line item costs.

The County will make available a number of information sources to assist with the GIS data adjustment including:

- GDACS section and quarter-section monument information (MCDOT & MCASR)
- Digital orthophotos (FCDMC)
- Digital CAD files of new land subdivisions (MCASR)
- Existing GIS parcel data to be adjusted (MCASR)
- Existing GIS zoning data to be adjusted (MCP&D)

Note:

MCDOT – Maricopa County Department of Transportation
MCASR - Maricopa County Assessor's Office
FCDMC – Flood Control District of Maricopa County
MCP&D – Maricopa County Planning and Development

2.2 LAYER ADJUSTMENT PRIORITIES

The County reviewed the 18 foundational GIS layers during the client requirements study to determine which layers require adjustment to GDACS and the orthophotography. The existing GIS layers requiring adjustment:

- Assessor's parcels, parcel text & subdivision boundaries
- Assessor's map ID grid
- Planning & Development annexations, zoning & city boundaries

The following table describes which of the 18 GIS foundational layers require adjustment to GDACS and the orthophotography.

City Boundaries	Need adjustment
Planning & Development Zoning	Need adjustment
Planning & Development Annexations	Need adjustment
Parcels including annotation and dimensions	Need adjustment
Subdivision Boundaries	Need adjustment
Street Centerlines - Assessor's Office	Need adjustment
Special Districts – Assessor's Office	Need adjustment
Map ID grid	Need adjustment
Air Quality Monitoring Stations	No adjustment needed
Airport Boundaries	No adjustment needed
Census Tracts, Block Groups and Blocks	No adjustment needed
County Park Boundaries	No adjustment needed
County Park Facilities	No adjustment needed
County Trails	No adjustment needed
County-owned Building Locations	No adjustment needed
Department specific districts	No adjustment needed
GDACS Survey Control	No adjustment needed
GDACS Survey Monuments (section & quarter-sections)	No adjustment needed
Mosquito Control Traps & Chemical Sensitive Citizens	No adjustment needed
Probation Cases	No adjustment needed
Regional Lakes	No adjustment needed
School District Boundaries	No adjustment needed

Section Lines	No adjustment needed
Sheriff Office Districts	No adjustment needed
Sheriff Office Patrol Beats	No adjustment needed
Sheriff Office Reporting Areas	No adjustment needed
Street Centerlines (Elections, MCDOT & Phoenix FD)	No adjustment needed
Voting Precincts	No adjustment needed
Zip Code Boundaries	No adjustment needed

Please note:

The Assessor's Office GIS parcel data covers the entire county. The Planning and Development GIS data only covers the unincorporated County. Contractors can view the existing data on the County's Internet Mapping website at:

http://www.maricopa.gov/assessor/gisPortal/gis_portal.asp

This link provides access to several departments GIS websites allowing the Contractor to preview and evaluate the data.

2.3 ADJUSTMENT SPECIFICATIONS

The following specifications relate to the existing GIS layers that require adjustment to GDACS and the orthophotography based on the client requirements study.

2.3.1 Assessor's Office Cadastral Layer Adjustment

All project participants expressed a need to have the cadastral layers adjusted to GDACS and overlay the County's orthophotography. These layers are used as a base map for many of the County's maps and exhibits. These layers are also key in completing spatial analysis tasks with concerns to land ownership. The project participants would like to have the parcels adjusted to a spatial accuracy of +/- 5 feet or better.

In areas where parcel lines are common to a GDACS section or quarter-section corner monument, the adjusted parcels need to be at an accuracy of +/- 1 foot to the GDACS corner monument. The proposed methodology should provide details on how the Contractor will achieve the desired accuracy requirements. The County is also interested in alternative methods or discussions concerning parcel data accuracy based on the available survey control, orthophotography and other source materials. The cadastral layers consist of:

- Parcels
- Parcel Text and Dimensions
- Subdivision Boundaries
- Assessor Book Boundaries

2.3.2 Work Flow Expectations

The project participants need to limit the time the existing GIS data is not available for normal data maintenance. The participants expect the Contractor to provide a production schedule showing a steady input of source materials from the County and delivery of completed adjusted areas. The Assessor's Office has expressed the desire to have 50 sections completed a week for the cadastral adjustment. The entire project should be completed in 1 calendar year. The cadastral production flow may look like the following:

- Week 1 - County staff prepare source materials for sections 1-50
- Week 2 - Contractor adjusts data and performs QC for sections 1-50
- Week 2 - County staff prepare source materials for sections 51-100

- Week 3 - Contractor deliveries adjusted GIS data for sections for sections 1-50
- Week 3 - County performs QC and acceptance testing for sections 1-50
- Week 3 - Contractor adjusts data and performs QC for sections 51-100
- Week 3 - County staff prepare source materials for sections 101-150
- Week 4 - Contractor deliveries adjusted GIS data for sections for sections 51-100
- Week 4 - County performs QC and acceptance testing for sections 51-100
- Week 4 - Contractor adjusts data and performs QC for sections 101-150
- Week 4 - County staff prepare source materials for sections 151-200

… Continue process for remaining areas of the county

The Contractor can provide alternative workflow and schedule that achieves participates goals of limiting the time GIS data is not available to staff.

2.3.3 CADASTRAL DATA ADJUSTMENT

The intent of the parcel adjustment is to develop a GIS parcel layer that ties to GDACS, correctly overlays the County high-resolution orthophotography and retains the accuracy of the new COGO'd subdivision drawings converted from provided engineering companies. The proposed GIS cadastral data adjustment scope should include the following tasks:

- Project initiation/work plan/communications plan
- Pilot project
- Countywide production
- Quality Control and corrections (as needed)

2.4 PROJECT INITIATION

Project initiation involves the County providing a notice to proceed to the Contractor. The first task will include the Contractor meeting with the County's Project Manager to establish administrative and communication procedures. Initiation should include on-site coordination with County staff preparing source materials and performing QC and acceptance testing. A kick-off meeting should also be conducted at which time the Contractor can present their final work plan and schedule. The work plan should specify Contractor and County staff roles and responsibilities. The selected Contractor is expected to use this opportunity to clarify any requirements for adjusting the GIS data, production priorities, review known problems areas, specific alignment rules, delivery logs and County needs. The County will also provide their expectations relating to accuracy, database standards, topological integrity, edge-matching, delivered formats and resolving data inconsistency problems.

This phase is expected to produce a work plan to complete the geospatial adjustment tasks and administrative procedures. The work plan will guide the remaining project tasks and shall include the workflows used to perform the parcel adjustment. County staff needs to be able to use the adjustment workflow for future data maintenance tasks. This includes discussions of handling specific adjustment situations and County known issues. The Contractor will be responsible for maintaining the project work plan during the project.

The County also desires the Contractor to use a web-based Problem / Resolution database to log specific issues, proposed solutions and final County solutions. The web site should have the capability to log specific issues into a database by location (i.e. section, township and range) and allow screen shots or graphics to be attached to easily understand the problem. Emails should be sent to key technical staff so specific issues can be resolved quickly. The Contractor should provide a description on how they will communicate technical issues to the County staff to receive guidance or responses quickly.

2.5 PILOT PROJECT

The County will ask the Contractor to perform a pilot project using the proposed adjustment methodology. The pilot involves the adjustment of the existing parcel data using the GDACS corner monuments and orthophotography. The County has identified 2 pilot areas, Pilot area 1 consists of 12 sections near the Happy Valley Road & Hwy 60 (Grand Avenue area) intersection, Pilot area 2 consists of 6 sections near Hyder Road and 571st Avenue in the southwest portion of the County. Pilot area 1 represents a suburban makeup of new subdivisions, older residential and commercial properties with available source materials including GDACS corner monuments and 2005 & 2006 orthophotography, Pilot area 2 represents a rural area with 2004 orthophotography (1 ft pixel resolution) and survey control monuments (approximately 3.5 mile spacing), no section corner monuments are available for this area. Refer to Figures 3-2 & 3-3 for location maps of the pilot areas. These areas can also be viewed using the County's Interactive Mapping web site.

The selected pilot areas provide the Contractor with a representation of issues to be found throughout the county including new subdivisions, older residential communities and commercial areas. The Contractor will deliver the adjusted pilot data in MicroStation and ESRI shapefile format.

The pilot projects will be completed in 6 weeks including 1 week for County staff to perform QC tests. County staff will prepare and deliver the source materials for the pilot area prior to the scheduled start of the pilot. The Contractor needs to provide a separate cost for completing the pilot projects.

County staff will prepare a packet of source materials for each section to be adjusted in the pilot area and provide this information to the Contractor. Based on the workflow expectations the Contractor will be given packets for the sections to be adjusted one week before the pilot project will begin. This allows the Contractor to perform adjustment and QC tasks and return the completed data to the County within 3-4 weeks.

The Contractor should conduct an evaluation of each section by overlaying the existing parcel data with the orthophotography and GDACS monuments. The evaluation should help identify the best method to adjust the parcels for each specific section. The adjusted parcels for a specific section need to be edge-matched with adjoining sections.

The following are the data source hierarchy when performing the parcel adjustment:

1. New Land Subdivisions – place and rotate engineering CAD files
2. COGO'd land parcels - retain accuracy of COGO'd data
3. Parcels adjusted by City of Peoria
4. Recently split parcels
5. Lesser accurate parcels - use heads-up digitizing methods (Contractor shall specify adjustment methodologies to be used).

In those areas where different adjustment methods are used, the Contractor will need to match adjoining areas producing a cartographically correct parcel map.

The Contractor is expected to complete the adjustment and necessary QC procedures for the pilot area. The Contractor needs to deliver the final adjusted data to the County in MicroStation V8 (dgn) and ESRI shapefile formats. The Contractor also needs to provide check plots for the pilot sections and a project report. The project report should provide information pertaining to the methodology used, specific issues encountered and general information relating to the parcel adjustment.

The Contractor needs to provide a separate line item cost to complete each pilot area.

County staff will perform QC and acceptance tests of the adjusted pilot data. The County's QC may include:

- Visual check of the adjusted parcels to the GDACS corner monuments
- Visual check of the adjusted parcels to the County's orthophotography
- Compare originally provided parcels to the adjusted parcels
- **Automated check to verify APN's have not been changed on the adjusted parcels**
- **Automated check to verify the data is on the proper MicroStation V8 levels**
- **Perform MicroStation and ArcGIS topology checks**
- Check line quality and fit within each section
- **Check CAD layers match Assessor's Office CAD standards**
- **Check curves have not been stroked or segmented**
- Check edge-matching between section drawings
- **Check for short segments and zero length lines**
- **Check for overshoots and undershoots**
- Check for correct text placement and alignment
- Field Checks

Items above in **Bold** indicate quality issues that need to meet zero error tolerance.

Following the County's QC, the Contractor shall be asked to perform corrections on the pilot data if sufficient errors were identified. The County understands that the pilot project is an iterative process with refinements to the adjustment procedures and methodology. The Contractor needs to be communicating with the County's Project Manager during the pilot project to resolve issues. The completed pilot data needs to be a quality deliverable that when checked and accepted by the County, is considered the first delivery of the adjusted parcels. Should the contractor be unable to correct their methodologies to consistently deliver adjusted parcels meeting the above criteria, the County may terminate the project with the contractor.

The County needs to accept the pilot data prior to providing the Contractor with the Notice to Proceed for countywide parcel adjustment.

2.6 COUNTYWIDE PARCEL ADJUST

Following the completion and acceptance of the pilot project, parcel adjustment tasks will commence for the remaining portions of the County based on the geographic prioritization schedule established by the County and Contractor during project initiation. The adjusted parcel data will comply with the final specifications and procedures generated during the pilot project. It is expected that the adjusted GIS parcel data will be delivered by Assessor's CAD drawing file geography. The County will provide the Contractor with a shapefile of the CAD ID grid, which references the CAD file boundaries.

The Contractor needs to deliver the adjusted parcel data as MicroStation V8 files and ESRI shapefiles. The ESRI shapefiles need to have the APN stored as an attribute and the adjustment methodology used coded to each parcel. The County will work with the Contractor to develop attribute values for the different methodologies that will be used to adjust the parcels. The County anticipates there will be 4-6 different adjustment methodologies that will be used for the parcel adjustment. If there is an additional cost to provide the ESRI shapefiles, the Contractor needs to provide a separate cost item in their proposal.

The County reserves the rights to field verify the final delivered adjusted parcels. This may involve having a surveyor collect locations using GPS to validate the spatial position of the adjusted parcels.

Following the delivery of the adjusted parcels, the County will perform QC and acceptance testing as outlined in the section describing the Pilot Project. Data delivered that fails to meet the County's acceptance review will be returned to the Contractor for revisions. The Contractor will have up to ten (10) business days to make corrections and resubmit the data to the County for QC and acceptance testing.

The County is also concerned that over the course of the project adjustment problems may be found following the initial QC and acceptance testing of specific sections. The County reserves the right to ask the Contractor to perform corrections for up to 6 months for areas where major adjustment problems are identified following the initial County QC and acceptance testing.

2.6.1 KNOWN PARCEL DATA ISSUES

The County is aware of specific areas where there are registration problems with the existing GIS parcels matching the survey corner monuments and overlaying the orthophotography. Refer to Figure 3-1, which shows the general location of known parcel registration problems. Areas with known poor parcel registration include:

- Paradise Valley
- Dobson Ranch
- Ahwatukee
- Desert Hills
- Happy Valley Rd. & Lake Pleasant Pkwy
- Grand Ave & Happy Valley Rd.
- Sun City West
- Romola
- Avondale
- Estrella Park
- Wittmann
- Circle City
- SE Wickenburg
- Wickenburg
- Aguila
- Rooks Rd
- Buckeye
- Gila Bend

2.6.2 PARCEL ADJUSTMENT APPROACH

The Contractor shall provide a discussion in their proposal about how they will handle these poor registration problems and what methodologies could be used to adjust the parcels. The Contractor needs to provide a clear description of their approach to completing the data adjustment. The approach descriptions should include:

- How the boundaries and other features on the existing parcel data will be adjusted to the GDACS corner monuments and orthophotography
- How the data will be registered to the geographic coordinate space and edge-matched across adjoining sections
- The decision making process for handling issues such as boundary discrepancies, closures, gaps and overlaps
- Achieving the County’s desired parcel data accuracy as specified earlier in this document
- Quality Control procedures
- Workflows to adjust these areas providing County staff with a technical process to maintain the parcel data

The Contractor shall provide separate costs for the different methodologies to be used to correct areas with poor registration. The separate methodology costs should be on a per section basis. This allows the County to estimate potential budgetary issues relating to

different adjustment options to correct these areas. For example, the County needs to understand the cost differences of using standard rubber-sheeting techniques vs. re-COGO'ing a large area. Refer to the Assessor's GIS mapping web site to review the problem areas in more detail. The following is the link to the Assessor's Office GIS mapping site - http://www.maricopa.gov/assessor/gis.

PLEASE SEE EXHIBIT 4 FOR EXAMPLE OF PARCEL REGISTRATION ISSUES

The County also includes downtown areas with multi-story residential and commercial buildings. The Assessor's Office handles this situation by generating a subdivision boundary for each floor in a building. The individual floor subdivision boundaries overlay each other. Parcel polygons are also generated for each floor. The parcel polygons for each floor do not always overlay each other for a specific building. The Contractor should provide a discussion on how to adjust and re-align the subdivision and parcel polygons for multi-story buildings.

The following is a list of items relating to adjusting the existing GIS parcels that need to be addressed in the Contractors proposal:

- Establish priorities based on the specific adjustment methodologies to perform countywide parcel adjustment
- Use the Assessor's CAD file geography as the geographic area to perform the adjustment
- Tie new subdivisions (last 6 years) to GDACS
- Retain positional accuracy of provided CAD parcel lines for all files (approximately 2,500 drawings)
- Attribute GIS parcels with the method used to perform the adjustment
- Perform parcel adjustment using existing MicroStation V8 files
- Do not modify APN's in provided existing GIS files
- Do not segment or stroke curve features
- Align multi-story building subdivision boundary and parcel polygons for individual buildings
- ~~Contractor to provide a separate cost to clip adjusted parcels to book boundaries~~
- All digital parcel data will be adjusted and stored using double precision coordinates
- MCDOT is currently developing section line GIS features based on the GDACS monuments. If completed this will be provided to the selected Contractor as an additional source
- Adjustment of approximately 2,500 MicroStation V8 CAD drawings.
- Provide all GIS data in Arizona State Plane Coordinates, Central Zone, NAD 83, International Feet
- Provide all "link adjustment" files, including a date stamp, for all GIS data requiring link files to complete needed adjustments.

2.7 PLANNING & ZONING DATA ADJUSTMENT

Maricopa County Planning & Development (P&D) Department is the responsible agency that interacts with the public on land use issues in the unincorporated areas of the County. This includes the preparation of a County General Plan land use, reviewing zoning applications, permits, etc. P&D also works with the cities to review and process annexation notices and city boundary changes. GIS is being used to support staff that are developing land use plans and reviewing zoning applications. They maintain several GIS layers that are shared with various departments. The P&D GIS layers to be included in the GDACS Geospatial Adjustment Project include:

- Annexations
- Zoning
- City Boundaries

The project participants need these layers to be at a spatial accuracy of +/- 5 feet or better. The spatial accuracy may vary based on the available source materials. The proposed methodology should provide details on how the Contractor will achieve the desired accuracy requirements. The Planning and Development GIS data can be reviewed on the County's Interactive Mapping web site named "PlanNet" at:

http://planning.maricopa.gov

General Information

The Planning & Development GIS data provides a foundation for land use related tasks. The annexation, zoning and city boundary data have been developed based on provided legal descriptions, hard copy drawings, digital CAD files and other recorded documents. P&D also uses the Assessor's parcel layer as a guide when performing plan review, adding new GIS features or performing data maintenance tasks. P&D maintains their GIS data in ESRI shapefile format.

The annexation layer was developed based on recorded documents such as legal descriptions, surveys, etc. The information is generally provided by the cities requesting the annexation. P&D staff uses the legal description to update the GIS layer and determine if there are any land related issues. A legal description is available for each of the 3,600 annexation polygon features. Annexation features are developed using the measurements on the legal description and tied to the GDACS section corner monuments. The County maintains a single GIS annexation layer.

The zoning layer was developed using the best available information including surveys, hard copy drawings, etc. Generally a map is provided to update the zoning layer and County staff use other available GIS layers such as the parcels, GDACS corner monuments, orthophotography, etc. to update or add new zoning features. The spatial accuracy of the zoning layer varies based on the available source information. The County currently maintains several zoning layers to track different types of zoning issues including:

- Current zoning
- Zoning overlays
- Special uses
- Pending cases

A database is maintained for each zoning type layer that links the information to the Assessor's Parcel Number (APN). The zoning overlays, special cases and pending cases data can be geo-coded using the APN to create a point file for these types. This allows the County to maintain a single current zoning layer that needs to be adjusted to the GDACS corner monument and orthophotography. The zoning overlays, special uses and pending cases point shapefiles do not need to be re-adjusted.

The database link to the Assessor's Office APN will only cover parcels with one zoning type. There are many areas within the County where parcels have multiple zoning types.

Planning and Development also maintains a city boundary layer based on information received from the cities. The annexation layer, parcels and orthophotography are used as a basis to prepare the city boundaries. The County maintains a single ESRI shapefile of the city boundaries.

The Contractor needs to discuss how the P&D data adjustment will be scheduled as it relates to performing the cadastral data adjustment. They need to know if the P&D data will be adjusted at the same time as the parcel layer adjustment or after the parcels have been adjusted.

2.7.1 PLANNING AND DEVELOPMENT DATA ADJUSTMENT

The P&D GIS data needs to be adjusted so it ties to the GDACS corner monuments and overlays the orthophotography. The Contractor needs to provide a technical approach to adjust the three P&D GIS layers. The technical approach needs to describe the workflows to perform the data adjustment. The proposed workflows should provide County staff with procedures to perform future data maintenance tasks. The Contractors proposal should address the following tasks:

- Project initiation/workplan/communications
- Pilot project
- Countywide production
- Quality Control

2.7.2 PROJECT INITIATION

Project initiation involves the County providing a notice to proceed to the Contractor. The Contractor needs to meet with the County's Project Manager and Planning and Development lead to establish administrative and communication procedures. Project initiation should include on-site coordination with County staff preparing source materials and performing QC and acceptance testing. A kick-off meeting should be conducted at which time the Contractor can present their final work plan and schedule. The work plan should specify Contractor and County staff roles and responsibilities. The selected Contractor is expected to use this opportunity to clarify any requirements for adjusting the P&D GIS data, production priorities, review known problem areas, specific alignment rules, delivery logs and County needs. The County will also provide their expectations relating to accuracy, database standards, topological integrity, edge-matching, delivered formats and resolving data inconsistency problems.

This phase is expected to produce a work plan to complete the geospatial adjustment tasks and administrative procedures. The work plan will guide the remaining project tasks and shall include the workflows used to perform the parcel adjustment. The Contractor will be responsible for maintaining the project work plan during the project.

The County also desires the Contractor to use a web-based Problem / Resolution database to log specific issues, proposed solutions and final County solutions. The web site should have the capability to log specific issues by location (i.e. section, township and range) and allow screen shots or graphics to be attached to easily understand the problem. Emails should be sent to key technical staff so specific issues can be resolved quickly. The Contractor should provide a description on how they will communicate technical issues to the County staff to receive guidance or responses quickly.

2.7.3 PILOT PROJECT

The County will ask the Contractor to perform a pilot project using the proposed adjustment methodology. The pilot involves the adjustment of the existing P&D data using the GDACS corner monuments and orthophotography. The P&D pilot will be performed using Pilot Area 1 from the cadastral data adjustment task. Pilot area 1 consists of 12 sections near the Happy Valley Road & Hwy 60 (Grand Avenue area) intersection, Pilot area 1 represents a suburban makeup of new subdivisions, older residential and commercial properties with available source materials including GDACS corner monuments and 2005 & 2006 orthophotography. Refer to Figures 3-2 & 3-3 for location maps of the pilot areas. These areas can also be viewed using the County's Interactive Mapping web site.

The pilot project will be completed in 4 weeks including 1 week for County staff to perform QC checks. County staff will prepare and deliver the source materials for the

pilot area prior to the scheduled start of work. The Contractor shall provide a separate cost to complete the pilot project.

County staff will prepare a source material packet for the pilot area and provide this information to the Contractor. The source materials may include:

- Legal descriptions for annexations
- Existing GIS data
- Zoning maps
- GDACS corner monuments
- County orthophotography

The source material packet would include legal descriptions for 3,600 annexation features. Currently these are available in hard copy format and would need to be copied or scanned to deliver them to the Contractor. The Contractor needs to address their approach to use the hard copy annexation files.

The Contractor needs to perform an evaluation of the pilot as it relates to the P&D GIS layers. The evaluation should assist the Contractor with identifying the best method to complete the data adjustment and develop a list of questions for P&D staff. In areas where a zoning line also represents a parcel line, the contractor needs to adjust the zoning line to be coincident with the parcels. This will eliminate current issues where the zoning lines and parcels do not lineup. The P&D adjusted data needs to be edge-matched and delivered as a single seamless shapefile.

The Contractor is expected to complete the adjustment and necessary QC procedures for the pilot area. The delivered pilot data will be delivered as an ESRI shapefile. Check plots and a project report shall also be delivered to the County for acceptance testing. The project report should provide information pertaining to the methodology used, specific issues encountered and general information relating to the P&D data adjustment task.

County staff will perform QC and acceptance tests of the adjusted pilot data. The County's QC may include:

- Visual check of the adjusted data to the GDACS corner monuments
- Visual check of the adjusted data to the County's orthophotography
- Compare originally provided data to the adjusted data
- Perform ArcGIS topology checks
- Check line quality and fit within each section
- Check curves have not been stroked or segmented
- Check edge-matching between section drawings
- Check for short segments and zero length lines
- Check for overshoots and undershoots
- Check for correct text placement and alignment

Following the County's QC, the Contractor may be asked to perform corrections on the pilot data if sufficient errors were identified. The County understands that the pilot project is an iterative process with refinements to the adjustment procedures and methodology. The Contractor needs to be communicating with the P&D lead during the pilot to resolve issues. The completed pilot data needs to be a quality deliverable that when checked and accepted by the County, is considered the first delivery of the adjusted P&D data.

2.7.4 COUNTYWIDE PLANNING AND DEVELOPMENT DATA ADJUSTMENT

Following the completion of the pilot project, adjustment tasks will commence for the remaining portions of the County based on the agreed production schedule. The adjusted

P&D data will comply with the final specifications and procedures generated during the pilot project. It is expected that the adjusted P&D GIS data will be delivered as a single countywide shapefile. The Contractor also needs to add an attribute to track the specific methodology used to adjust the P&D data. The County anticipates that several adjustment methodologies may be used and will work with the Contractor to develop attribute values for each methodology.

County staff will perform QC and acceptance test of the delivered data. The Contractor will be expected to complete errors found during the County's QC efforts. Corrections need to be completed and resubmitted to the County for QC and acceptance.

2.8 SUBMISSION OF PROPOSALS

It is intended that each Contractor furnish all information requested in this document and the letter of invitation. Unless specifically requested, promotional literature is not desired and will not be considered to meet any of the requirements. The Contractor's response should contain the information requested.

Each Contractor is required to include the following items in their proposal. These items should be used as the title and format around which the proposal is organized. Omission of any of these items could be grounds for proposal rejection by Maricopa County.

~~2.8.1 Designation of Confidential and Proprietary Information~~

~~The Contractor needs to identify in their proposal any confidential or proprietary information.~~

2.8.1 Organizational Description

Provide a description of your organization, including qualifications addressing why your organization is suited to provide the services requested. Describe your facilities where the conversion and adjustment is to be done and technology that will be used for the work in this project. Include a description of your staffing commitments to assure your ability to meet the County's time frame. Describe the proposed project team and the level of commitment for key individuals that will be provided to this project. Provide resumes for the project manager, GIS/ land information specialist, title boundary expert, land survey expert and other key staff. This must also include a description of subcontractors and associations with other firms you wish to utilize in the performance of proposed work under this project, including the intended working relationships and responsibilities of each.

2.8.2 Project Approach

Please describe your understanding of the County's needs in the proposed project and describe past client projects you have completed that are similar in nature to this RFP.

Describe your approach to completing the project and delivering the requested products both from a technical and project management perspective. This must include technical procedures to be used and the decision making process for interpretation of land boundary information and quality control procedures that will be observed. This component should also include a statement indicating the mechanisms intended to be used to coordinate the proposed work with the County.

If the Contractor, through its experience, identifies additional items that are particularly useful for the parcel adjustment project please identify those items and attach a cost proposal specific to that item. Likewise if there are items that are listed that the Contractor believes have proven not to be beneficial in respect to cost, please list them. If the Contractor would like to propose different methodologies, please provide a separate cost item for that item.

2.8.3 Hardware and Software

The Contractor may use industry standard hardware and software to complete the data adjustment tasks but must deliver the adjusted GIS data in the formats specified in Section 3 - Geospatial Adjustment Specifications (refer to Table 3-1). The Contractor needs to provide information relating to the hardware and software to be used to complete this project. This should include any data translation between different GIS formats and a discussion on how data will be QC'd to ensure there is no loss of GIS features, spatial accuracy or attribute information.

2.8.4 Project Schedule

The County anticipates work will be completed on a section by section basis with the County assigning the specific order. The schedule will be mutually agreed upon by the Contractor and the County.

The Assessor's Office anticipates the completion of the parcel adjustment to be completed within 9 to 12 months. Please indicate a typical schedule of the work flow process that your firm will use to complete this portion of the project on time.

The Planning & Development Department anticipates the completion of the zoning, annexation and city boundary adjustment to be completed within 6-9 months. Please provide a schedule of the work flow to complete this portion of the project.

Also provide a discussion and/or graphic showing the timing of completing the Assessor' Office adjustments vs. the Planning & Development Department adjustments. The County needs to understand if these adjustments will be completed concurrently or as successive tasks.

2.8.5 County Obligations

Provide a list of items to be provided by the County to assist you in completing the requested work. This must include manual records or digital data (i.e. corner control, orthophotography, etc.) and/or proposed use of County staff, office space, and any equipment or materials/supplies that will be expected from the County. The County has provided an initial list and description of the source materials available for this project.

2.8.6 Conflict of Interest

The proposal must include a statement that you have no conflict of interest with past, present or known future policies, plans, or programs of the County.

2.8.7 County Provided Source Materials

The contracted vendor must agree that all data, maps, aerial photos and support materials may only be used to fulfill their contractual obligations of the project. All data, maps, aerial photos and support materials may not be sold or distributed without prior written approval from Maricopa County. The data may be shared with approved subcontractors with the same restrictions.

2.8.8 References

Each Contractor must provide 3 references from organizations that have recently (within the last 3 years) procured similar services and briefly describe the size and scope of the parcel mapping project and provide the names, addresses and phone numbers of the contact person from those organizations. The individuals identified must at least hold a position of project management or other contract authority. Please provide the size of each reference project in terms of number of parcels converted, type of conversion

methodology employed, period of contract and the amount ($) of the contract. In addition, please provide identical contact information as required above for any parcel mapping project that your firm has been involved with but has been terminated in the last 3 years and the reason for the termination.

2.8.9 Pricing Information

The Contractor is required to submit a cost for each project component as outlined in the RFP, as well as, a total project cost. Please note that some requested project components might end up being limited in scope depending upon final cost estimates relative to available funds.

ALL PRICING SHALL BE SUBMITTED ON ATTACHMENT A – PRICING

2.8.10 Payment Schedule

A payment schedule will be formulated and determined based on final deliverables schedule.

Please See Attachment A – Pricing

Each Module will be deemed payable upon completion and acceptance less a 20% hold back. The 20% hold back will be payable upon completion and acceptance of the entire project

2.8.11 Late Deliveries

Data deliveries rejected by the County due to excessive errors or edits will not be considered as received and could be subject to late delivery penalties. The intent is to have the Contractor deliver the adjusted parcel data as "First Time Right". The County may consider accepting a delivery with minor edits, meaning County staff can fix the corrections quickly (i.e. 15 minutes or less).

Should the selected Contractor fail to perform the work within the period of time stipulated in the contract, the Contractor shall pay the County $100 per calendar day from the day of default, unless written extensions of time have been granted by the County's Project Manager, which specifically waives the late completion charges.

The County shall have the right to deduct the late completion charges from any monies in its hand, otherwise due, or to become due, to the Contractor, or to sue for and recover compensation of damages for nonperformance of the contract within a stipulated time.

2.9 FACILITIES:

During the course of this Contract, the County shall provide the Contractor's personnel with adequate workspace for consultants and such other related facilities as may be required by Contractor to carry out its obligation enumerated herein.

2.10 INVOICES AND PAYMENTS:

2.10.1 **The Contractor shall submit two (2) legible copies of their detailed invoice before payment(s) can be made. At a minimum, the invoice must provide the following information:**

2.10.1.1 Company name, address and contact
2.10.1.2 County bill-to name and contact information
2.10.1.3 Contract Serial Number
2.10.1.4 County purchase order number
2.10.1.5 Invoice number and date

2.10.1.6 Payment terms
2.10.1.7 Date of service or delivery
2.10.1.8 Quantity (number of days or weeks)
2.10.1.9 Description of Purchase (product or services)
2.10.1.10 Pricing per unit of purchase
2.10.1.11 Extended price
2.10.1.12 Mileage w/rate (if applicable)
2.10.1.13 Arrival and completion time (if applicable)
2.10.1.14 Total Amount Due

Problems regarding billing or invoicing shall be directed to the using agency as listed on the Purchase Order.

2.10.2 Payment will be made to the Contractor by Accounts Payable through the Maricopa County Vendor Express Payment Program. This is an Electronic Funds Transfer (EFT) process. After Award the Contractor shall fill out an EFT Enrollment form (to be provided by the Procurement Officer) or as located on the County Department of Finance Website as a fillable PDF document (www.maricopa.gov/finance/).

2.10.3 EFT payments to the routing and account numbers designated by the Contractor will include the details on the specific invoices that the payment covers. The Contractor is required to discuss remittance delivery capabilities with their designated financial institution for access to those details.

2.11 TAX: (SERVICES)

No tax shall be levied against labor. It is the responsibility of the Contractor to determine any and all taxes and include the same in proposal price.

2.12 DELIVERY:

It shall be the Contractor's responsibility to meet the proposed delivery requirements. Maricopa County reserves the right to obtain services on the open market in the event the Contractor fails to make delivery and any price differential will be charged against the Contractor.

3.0 SPECIAL TERMS & CONDITIONS:

3.1 CONTRACT TERM:

This Request for Proposal is for awarding a firm, fixed price purchasing contract to cover a one (1) year period.

3.2 OPTION TO EXTEND:

The County may, at their option and with the approval of the Contractor, extend the period of this Contract up to a maximum of Four (4), one (1) year options, (or at the County's sole discretion, extend the contract on a month to month bases for a maximum of six (6) months after expiration). The Contractor shall be notified in writing by the Materials Management Department of the County's intention to extend the contract period at least thirty (30) calendar days prior to the expiration of the original contract period.

3.3 PRICE ADJUSTMENTS:

Any requests for reasonable price adjustments must be submitted sixty (60) days prior to the Contract expiration. Requests for adjustment in cost of labor and/or materials must be supported by appropriate documentation. If County agrees to the adjusted price terms, County shall issue written approval of the change. The reasonableness of the request will be determined by comparing the request with the (Consumer Price Index) or by performing a market survey.

3.4 INDEMNIFICATION AND INSURANCE:

3.4.1 INDEMNIFICATION

To the fullest extent permitted by law, Contractor shall defend, indemnify, and hold harmless County, its agents, representatives, officers, directors, officials, and employees from and against all claims, damages, losses and expenses, including, but not limited to, attorney fees, court costs, expert witness fees, and the cost of appellate proceedings, relating to, arising out of, or alleged to have resulted from the negligent acts, errors, omissions or mistakes relating to the performance of this Contract. Contractor's duty to defend, indemnify and hold harmless County, its agents, representatives, officers, directors, officials, and employees shall arise in connection with any claim, damage, loss or expense that is attributable to bodily injury, sickness, disease, death, or injury to, impairment, or destruction of property, including loss of use resulting there from, caused by any negligent acts, errors, omissions or mistakes in the performance of this Contract including any person for whose acts, errors, omissions or mistakes Contractor may be legally liable.

The amount and type of insurance coverage requirements set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

The scope of this indemnification does not extend to the sole negligence of County.

3.5 INSURANCE REQUIREMENTS

Contractor, at Contactor's own expense, shall purchase and maintain the herein stipulated minimum insurance from a company or companies duly licensed by the State of Arizona and possessing a current A.M. Best, Inc. rating of B++6. In lieu of State of Arizona licensing, the stipulated insurance may be purchased from a company or companies, which are authorized to do business in the State of Arizona, provided that said insurance companies meet the approval of County. The form of any insurance policies and forms must be acceptable to County.

All insurance required herein shall be maintained in full force and effect until all work or service required to be performed under the terms of the Contract is satisfactorily completed and formally accepted. Failure to do so may, at the sole discretion of County, constitute a material breach of this Contract.

Contractor's insurance shall be primary insurance as respects County, and any insurance or self-insurance maintained by County shall not contribute to it.

Any failure to comply with the claim reporting provisions of the insurance policies or any breach of an insurance policy warranty shall not affect the County's right to coverage afforded under the insurance policies.

The insurance policies may provide coverage that contains deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to County under such policies. Contactor shall be solely responsible for the deductible and/or self-insured retention and County, at its option, may require Contractor to secure payment of such deductibles or self-insured retentions by a surety bond or an irrevocable and unconditional letter of credit.

County reserves the right to request and to receive, within 10 working days, certified copies of any or all of the herein required insurance policies and/or endorsements. County shall not be obligated, however, to review such policies and/or endorsements or to advise Contractor of any deficiencies in such policies and endorsements, and such receipt shall not relieve Contractor from, or be deemed a waiver of County's right to insist on strict fulfillment of Contractor's obligations under this Contract.

The insurance policies required by this Contract, except Workers' Compensation, and Errors and Omissions, shall name County, its agents, representatives, officers, directors, officials and employees as Additional Insureds.

The policies required hereunder, except Workers' Compensation, and Errors and Omissions, shall contain a waiver of transfer of rights of recovery (subrogation) against County, its agents, representatives, officers, directors, officials and employees for any claims arising out of Contractor's work or service.

Contractor is required to procure and maintain the following coverages indicated by a checkmark:

3.5.1 Commercial General Liability:

Commercial General Liability insurance and, if necessary, Commercial Umbrella insurance with a limit of not less than $1,000,000 for each occurrence, $2,000,000 Products/Completed Operations Aggregate, and $2,000,000 General Aggregate Limit. The policy shall include coverage for bodily injury, broad form property damage, personal injury, products and completed operations and blanket contractual coverage, and shall not contain any provision which would serve to limit third party action over claims. There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.

3.5.2 Automobile Liability:

Commercial/Business Automobile Liability insurance and, if necessary, Commercial Umbrella insurance with a combined single limit for bodily injury and property damage of not less than $1,000,000 each occurrence with respect to any of the Contractor's owned, hired, and non-owned vehicles assigned to or used in performance of the Contractor's work or services under this Contract.

3.5.3 Workers' Compensation:

Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Contractor's employees engaged in the performance of the work or services under this Contract; and Employer's Liability insurance of not less than $100,000 for each accident, $100,000 disease for each employee, and $500,000 disease policy limit.

Contractor waives all rights against County and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the Workers' Compensation and Employer's Liability or commercial umbrella liability insurance obtained by Contractor pursuant to this Contract.

~~3.5.4 Errors and Omissions Insurance:~~

~~Errors and Omissions insurance and, if necessary, Commercial Umbrella insurance, which will insure and provide coverage for errors or omissions of the Contractor, with limits of no less than $1,000,000 for each claim.~~

3.5.5 Certificates of Insurance.

3.5.5.1 Prior to commencing work or services under this Contract, Contractor shall have insurance in effect as required by the Contract in the form provided by the County, issued by Contractor's insurer(s), as evidence that policies providing the required coverage, conditions and limits required by this Contract are in full force and effect. Such certificates shall be made available to the County upon 48 hours notice. **BY SIGNING THE AGREEMENT PAGE THE CONTRACTOR AGREES TO THIS REQUIREMENT AND FAILURE**

TO MEET THIS REQUIREMENT WILL RESULT IN CANCELLATION OF CONTRACT.

In the event any insurance policy (ies) required by this contract is (are) written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of **Contractor's** work or services and as evidenced by annual Certificates of Insurance.

If a policy does expire during the life of the Contract, a renewal certificate must be sent to **County** fifteen (15) days prior to the expiration date.

3.5.5.2 Cancellation and Expiration Notice.

Insurance required herein shall not be permitted to expire, be canceled, or materially changed without thirty (30) days prior written notice to the County.

~~3.6 BOND REQUIREMENT:~~

~~Concurrently with the submittal of the Contract, the Contractor shall furnish the Contracting Agency the following bonds, which shall become binding upon the award of the contract to the Contractor.~~

~~(A) A Performance Bond equal to the full Contract amount conditioned upon the faithful performance of the Contract in accordance with plans, specifications and conditions thereof. Such bond shall be solely for the protection of the Contracting Agency awarding the Contract.~~

~~Each such bond shall include a provision allowing the prevailing party in a suit on such bond to recover as a part of his judgment such reasonable attorney's fees as may be fixed by a judge of the court.~~

~~Each bond shall be executed by a surety company or companies holding a certificate of authority to transact surety business in the State of Arizona issued by the Director of the Department of Insurance. The bonds shall not be executed by an individual surety or sureties. The bonds shall be made payable and acceptable to the Contracting Agency. The bonds shall be written or countersigned by an authorized representative of the surety who is either a resident of the State of Arizona or whose principal office is maintained in this state, as by law required, and the bonds shall have attached thereto a certified copy of the Power of Attorney of the signing official. In addition, said company or companies shall be rated "Best A" or better as required by the Contracting Agency, as currently listed in the most recent Best Key Rating Guide, published by the A.M. Best Company.~~

~~3.7 PROCUREMENT CARD ORDERING CAPABILITY:~~

~~It is the intent of Maricopa County to utilize a procurement card that may be used by the County from time to time, to place and make payment for orders under the Contract. Respondents without this capability may be considered non-responsive and not eligible for award consideration.~~

3.8 SCHEDULE OF EVENTS

Request for Proposals Issued: JANUARY 25th, 2007

Deadline for written questions (48) hours after Pre-Proposal meeting). No questions will be responded to prior to the Pre-Proposal Conference. All questions must be submitted to **cunicol@mail.maricopa.gov** and be received by 5:00 p.m. Arizona time. All questions and answers will be posted to www.maricopa.gov with the original solicitation.

Deadline for submission of proposals is 2:00 P.M., MST, on MARCH **30th** ~~16th 2nd,~~ 2007. All proposals must be received before 2:00 P.M. on the above date at Maricopa County Materials Management Department, 320 West Lincoln Street, Phoenix, AZ 85003.

Proposed review of Proposals and short list decision:	~~MARCH 30th 16th~~, **APRIL 13th** 2007
Proposed Respondent presentations: (if required)	~~MARCH 28th~~, **APRIL 27th** ~~9th~~**,** 2007
Proposed selection and negotiation:	~~APRIL~~ **MAY** 2007
Proposed Best & Final (if required)	~~APRIL~~ **MAY** 2007
Proposed award of Contract:	~~MAY~~ **JUNE** 2007

All responses to this Request for Proposal become the property of Maricopa County and (other than pricing) will be held confidential, to the extent permissible by law. The County will not be held accountable if material from proposal responses is obtained without the written consent of the Respondent by parties other than the County.

3.9 INQUIRIES AND NOTICES:

All inquiries concerning information herein shall be addressed to:

MARICOPA COUNTY
DEPARTMENT OF MATERIALS MANAGEMENT
ATTN: CONTRACT ADMINISTRATION
320 W. LINCOLN ST.
PHOENIX, AZ 85003

Administrative telephone inquiries shall be addressed to:

LONNIE CUNICO, PROCUREMENT OFFICER, 602-506-3243
(cunicol@mail.maricopa.gov)

Inquiries may be submitted by telephone but must be followed up in writing. No oral communication is binding on Maricopa County.

3.10 INSTRUCTIONS FOR PREPARING AND SUBMITTING PROPOSALS:

Respondents shall provide one (1) original hard copy (labeled) and (5) FIVE hardcopy copies of their proposal, plus two (2) electronic copies, including pricing (Attachment A Shall be in Excel format, NO pdf files), on CD. **Respondents shall address proposals identified with return address, serial number and title in the following manner:**

Maricopa County Department of Materials Management
320 W. Lincoln St.
Phoenix, AZ 85003

SERIAL 06142 – RFP
GDACS – GEOSPATIAL ADJUSTMENT PROJECT

Proposals must be signed by an owner, partner or corporate official who has been authorized to make such commitments. All prices shall be held firm for a period of one hundred fifty (150) days after the RFP closing date.

3.11 EXCEPTIONS TO THE SOLICITATION:

The Respondent shall identify and list all exceptions taken to all sections of 06142 – RFP and list these exceptions referencing the section (paragraph) where the exception exists and identify the

exceptions and the proposed wording for the Respondent's exception under the heading, "Exception to the PROPOSAL Solicitation, SERIAL 06142- RFP**." Exceptions that surface elsewhere and that do not also appear under the heading, "Exceptions to the PROPOSAL Solicitation, SERIAL 06142 - RFP," shall be considered invalid and void and of no contractual significance.**

The County reserves the right to reject, determine the proposal non-responsive, enter into negotiation on any of the Respondent exceptions, or accept them outright.

3.12 GENERAL CONTENT:

The Proposal should be specific and complete in every detail. It should be practical and provide a straightforward, concise delineation of capabilities to satisfactorily perform the Contract being sought.

3.13 FORMAT AND CONTENT:

To aid in the evaluation, it is desired that all proposals follow the same general format. The proposals are to be submitted in binders and have sections tabbed as below: (Responses are limited to 200 pages, single sided, 10 point font type).

3.13.1 Table of Contents

3.13.2 Letter of Transmittal (Exhibit 2)

3.13.3 Executive Summary – This section shall contain an outline of the general approach utilized in the proposal.

3.13.4 Proposal – This section should contain a statement of all of the programs and services proposed, including conclusions and generalized recommendations. Proposals should be all-inclusive, detailing respondent's best offer.

3.13.5 Detail of items as requested in Section 2.8 of RFP

3.13.6 Proposal Exceptions

3.13.7 Attachment A (Pricing) (Excel format only)

3.13.8 Attachment B (Agreement Page)

3.13.9 Attachment C (References)

3.14 EVALUATION OF PROPOSAL – SELECTION FACTORS:

A Proposal Evaluation Committee shall be appointed, chaired by the Procurement Officer to evaluate each Proposal. At the County's option, Respondents may be invited to make presentations to the Evaluation Committee. Best and Final Offers and/or Negotiations may be conducted, as needed, with the highest rated Respondent(s). Proposals will be evaluated on the following criteria which are listed descending order of importance.

3.14.1 Respondent's proven skills and technical competence.

3.14.2 Approach and philosophy to provide services.

3.14.3 Credentials of project staff.

3.14.4 Price of goods, services and/or materials and allocation of man-hours.

3.15 POST AWARD MEETING:

The successful Respondent(s) shall be required to attend a post-award meeting with the Using Agency to discuss the terms and conditions of the Contract. This meeting will be coordinated by the Procurement Officer of the Contract.

NOTE: RESPONDENTS ARE REQUIRED TO USE ATTACHED FORMS TO SUBMIT THEIR PROPOSALS.

ATTACHMENT A
PRICING

SERIAL 06142-RFP
PRICING SHEET: NIGP 92545/S073710 B0700212
BIDDER NAME: _____
VENDOR # : _____
BIDDER ADDRESS: _____
P.O. ADDRESS: _____
BIDDER PHONE #: _____
BIDDER FAX #: _____
COMPANY WEB SITE: _____
COMPANY CONTACT (REP): _____
E-MAIL ADDRESS (REP): _____

WILLING TO ACCEPT FUTURE SOLICITATIONS VIA EMAIL: _____ YES _____ NO

ACCEPT PROCUREMENT CARD: _____ YES _____ NO

REBATE (CASH OR CREDIT) FOR UTILIZING PROCUREMENT CARD: _____ YES _____ NO _____ % REBATE
(Payment shall be made within 48 hrs utilizing the Purchasing Card)

INTERNET ORDERING CAPABILITY: _____ YES _____ NO _____ % DISCOUNT

OTHER GOV'T. AGENCIES MAY USE THIS CONTRACT: _____YES _____ NO

PAYMENT TERMS: BIDDER IS REQUIRED TO PICK ONE OF THE FOLLOWING.
TERMS WILL BE CONSIDERED IN DETERMINING LOW BID.
FAILURE TO CHOOSE A TERM WILL RESULT IN A DEFAULT TO NET 30.
BIDDER MUST INITIAL THE SELECTION BELOW.

NET 10 _____
NET 15 _____
NET 20 _____
NET 30 _____
NET 45 _____
NET 60 _____
NET 90 _____
2% 10 DAYS NET 30 _____
1% 10 DAYS NET 30 _____
2% 30 DAYS NET 31 _____
1% 30 DAYS NET 31 _____
5% 30 DAYS NET 31 _____

INDICATE PERCENTAGE OF M/WBE PARTICIPATION IF ANY HERE:_____%

PLEASE INDICATE HOW YOU HEARD ABOUT THIS SOLICITATION

_____ NEWSPAPER ADVERTISEMENT
_____ MARICOPA COUNTY WEB SITE
_____ POSTAL MAIL PRE-SOLICITATION NOTICE
_____ E-MAIL PRE-SOLICITATION NOTICE
_____ OTHER (PLEASE SPECIFY)

ALL PRICING SHALL BE SUBMITTED ON SAME CD AS PROPOSAL AND FORMATTED IN EXCEL '2003. RESPONSE WILL NOT BE ACCEPTED WITHOUT THE ACCOMPANYING CDs IN YOUR SUBMITTAL. ANY RESPONSE NOT CONTAINING THE REQUIRED CDs MAY BE CONSIDERED NON-RESPONSIVE AND NOT CONSIDERED FOR EVALUATION OR CONTRACT AWARD.

ATTACHMENT A
PRICING

1.0 PRICING:

Pricing should reflect a Frim Fixed for Each Designated Specified Project

	PROJECT	**PRICING**
1.1	**GIS Data Adjustment**	**$** _____
~~1.2~~	~~Assessor's Office- Cadastral Layer Adjustment~~	~~$~~ _____
1.3	**Cadastral Data Adjustment**	**$** _____
1.4	**Pilot Project -** ~~GDACS~~ **Cadastral & Planning & Development**	**$** _____
1.4.1	**PILOT #1**	**$** _____
1.4.2	**PILOT #2**	**$** _____
~~1.5~~	~~Countywide Parcel Adjust~~	~~$~~ _____
1.6	**Planning & Development Data Adjust**	**$** _____
~~1.7~~	~~Planning and Development Pilot~~	~~$~~ _____

2.0 PRICING:

2.1 **ADDITIONAL LABOR HOURS**

HOURLY RATES - Additional Requirements as Assigned
Please Note Hourly Rates

Please Provide Posistion Titles and Applicable Hourly Rate

2.1.1	TITLE	**$** _____
2.1.2	TITLE	**$** _____
2.1.3	TITLE	**$** _____

Additional As Needed

ATTACHMENT B

AGREEMENT

Respondent hereby certifies that Respondent has read, understands and agrees that acceptance by Maricopa County of the Respondent's Offer will create a binding Contract. Respondent agrees to fully comply with all terms and conditions as set forth in the Maricopa County Procurement Code, and amendments thereto, together with the specifications and other documentary forms herewith made a part of this specific procurement

BY SIGNING THIS PAGE THE SUBMITTING RESPONDENT CERTIFIES THAT RESPONDENT HAS REVIEWED THE ADMINISTRATIVE INFORMATION AND DRAFT RFP CONTRACT'S TERMS AND CONDITIONS LOCATED AT http://www.maricopa.gov/materials. AND AGREE TO BE CONTRACTUALLY BOUND TO THEM.

MINORITY/ WOMEN-OWNED SMALL BUSINESSES (check appropriate item):

_____ Disadvantaged Business Enterprise (DBE)
_____ Women-Owned Business Enterprise (WBE)
_____ Minority Business Enterprise (MBE)
_____ Small Business Enterprise (SBE)

RESPONDENT SUBMITTING PROPOSAL

FEDERAL TAX ID NUMBER

PRINTED NAME AND TITLE

AUTHORIZED SIGNATURE

ADDRESS

TELEPHONE FAX #

CITY STATE ZIP

DATE

WEB SITE: _____

EMAIL ADDRESS: _____

MARICOPA COUNTY, ARIZONA

BY: _____
DIRECTOR, MATERIALS MANAGEMENT

DATE

BY: _____
CHAIRMAN, BOARD OF SUPERVISORS

DATE

ATTESTED:

CLERK OF THE BOARD

DATE

APPROVED AS TO FORM:

DEPUTY MARICOPA COUNTY ATTORNEY

DATE

ATTACHMENT C

RESPONDENT REFERENCES

RESPONDENT SUBMITTING PROPOSAL: _____

1. COMPANY NAME: _____

   ADDRESS: _____

   CONTACT PERSON: _____

   TELEPHONE: _____ E-MAIL ADDRESS: _____

2. COMPANY NAME: _____

   ADDRESS: _____

   CONTACT PERSON: _____

   TELEPHONE: _____ E-MAIL ADDRESS: _____

3. COMPANY NAME: _____

   ADDRESS: _____

   CONTACT PERSON: _____

   TELEPHONE: _____ E-MAIL ADDRESS: _____

4. COMPANY NAME: _____

   ADDRESS: _____

   CONTACT PERSON: _____

   TELEPHONE: _____ E-MAIL ADDRESS: _____

5. COMPANY NAME: _____

   ADDRESS: _____

   CONTACT PERSON: _____

   TELEPHONE: _____ E-MAIL ADDRESS: _____

EXHIBIT 1
VENDOR REGISTRATION PROCEDURES

On-line Vendor Registration at Maricopa County is available NOW!

On November 22, 2004, Maricopa County changed its vendor registration process.

On-Line Registration is FREE and REQUIRED for all vendors.

Register On-line at www.maricopa.gov/materials

It is required that you select an appropriate commodity code(s) associated with your line of business.

Upon completion of your on-line registration, you are responsible for updating any changes to your information. Please retain your Login ID and Password for future use.

If you have any questions, email us at VendorReg@mail.maricopa.gov.

EXHIBIT 2

LETTER OF TRANSMITTAL
(To be typed on the letterhead of Offeror)

Maricopa County Department of Materials Management
320 West Lincoln,
Phoenix, Arizona 85003

Re: RFP Number – 06142

To Whom It May Concern:

(NAME OF COMPANY) (Herein referred to as the "RESPONDENT"), hereby submits its response to your Request for Proposal dated _____, and agrees to perform as proposed in their proposal, if awarded the contract. The Respondent shall thereupon be contractually obligated to carry out its responsibilities respecting the services proposed.

Kindly advise this in writing on or before _____ if you should desire to accept this proposal.

Very truly yours,

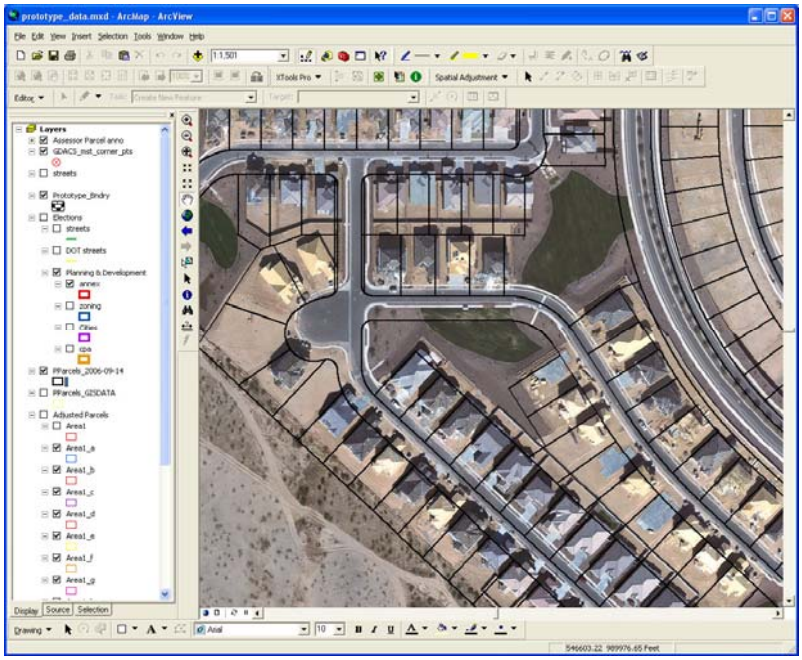
_____
NAME (please print)

_____
SIGNATURE

_____
TITLE (please print)

EXHIBIT 3
ADJUSTMENT RESULT IMAGES
Per Section 1.5.4

BEFORE ADJUSTMENT



AFTER ADJUSTMENT

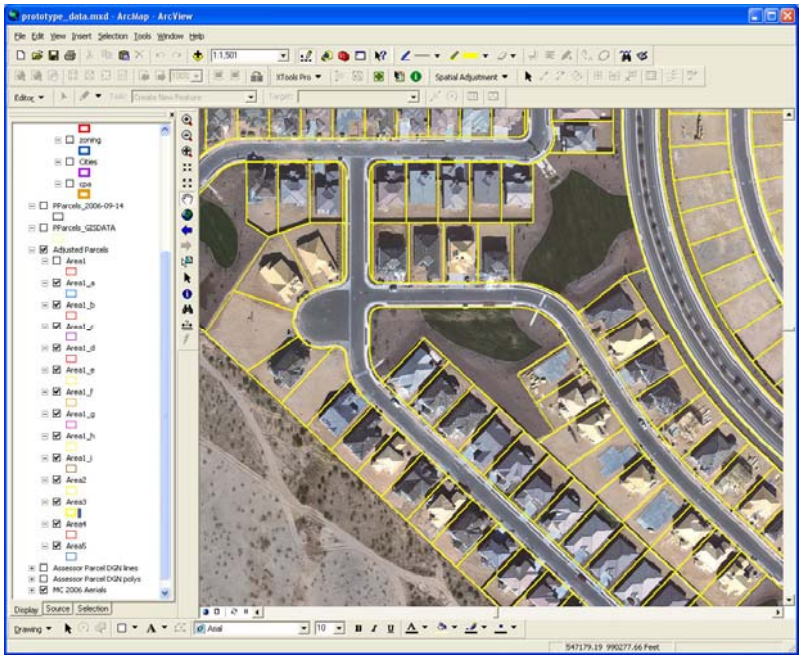


EXHIBIT – 4
Example of Parcel Registration Problem

Sun City West

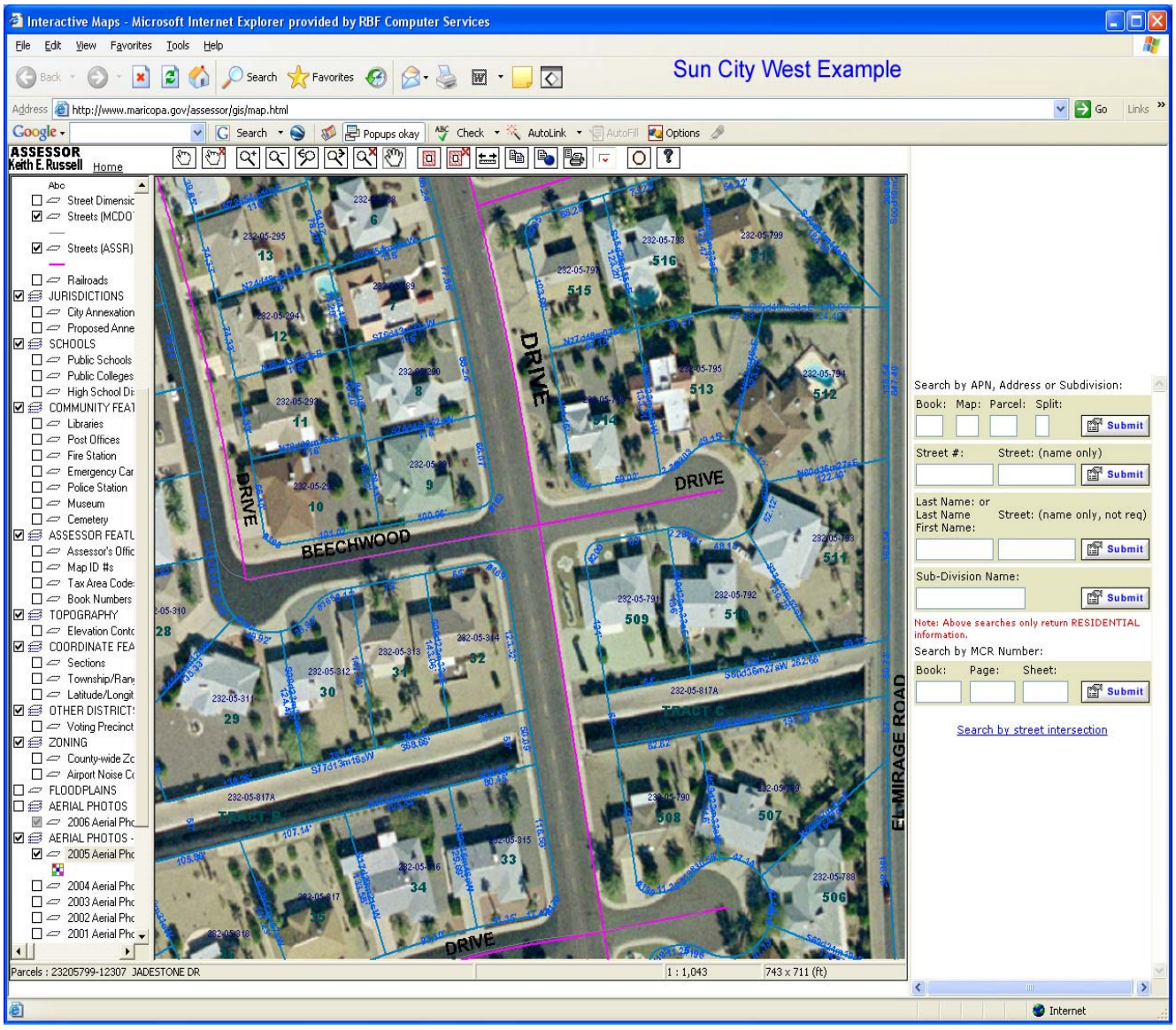


EXHIBIT 5
Areas with Poor Parcel Registration

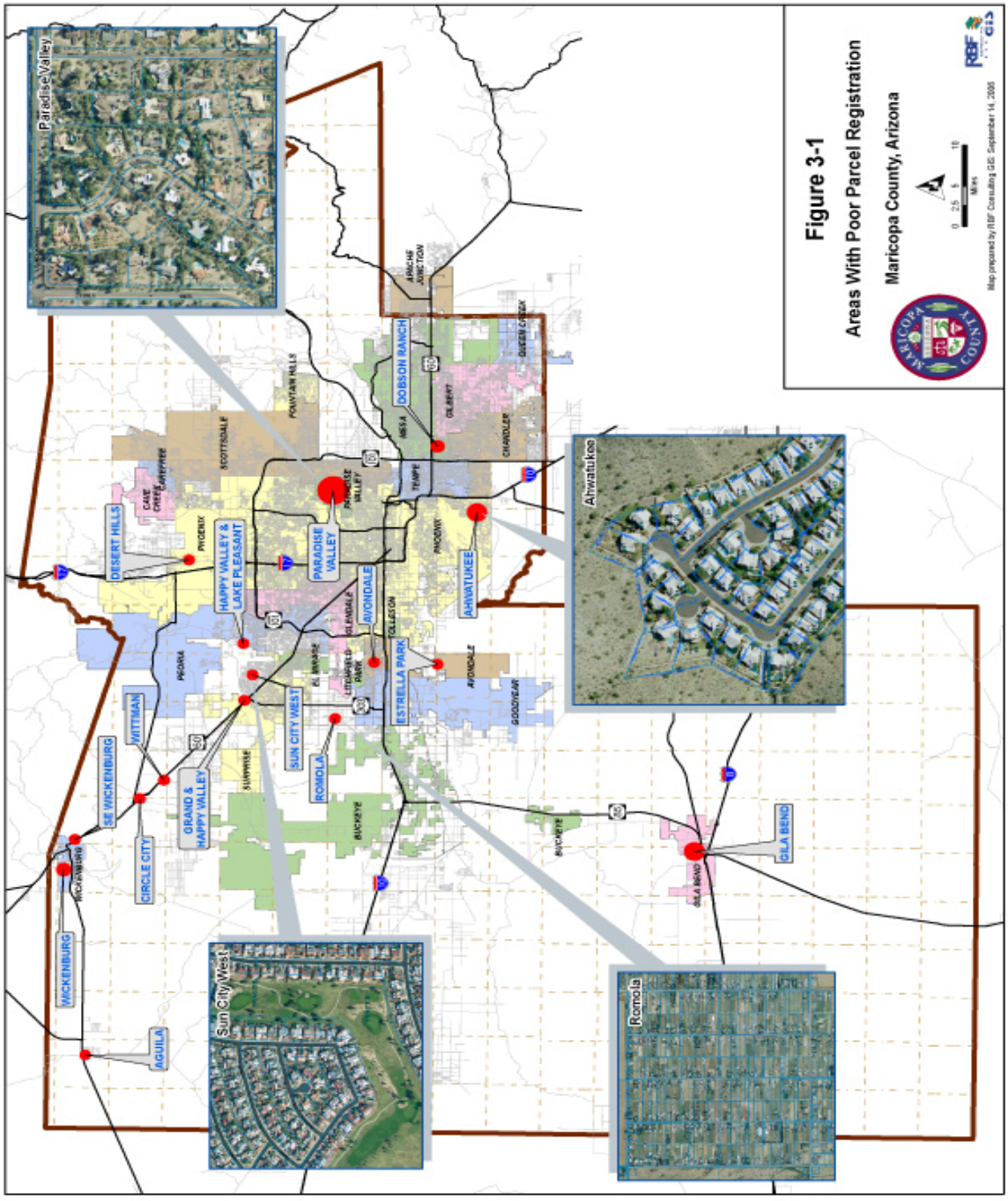


EXHIBIT – 6
Pilot Area Locations

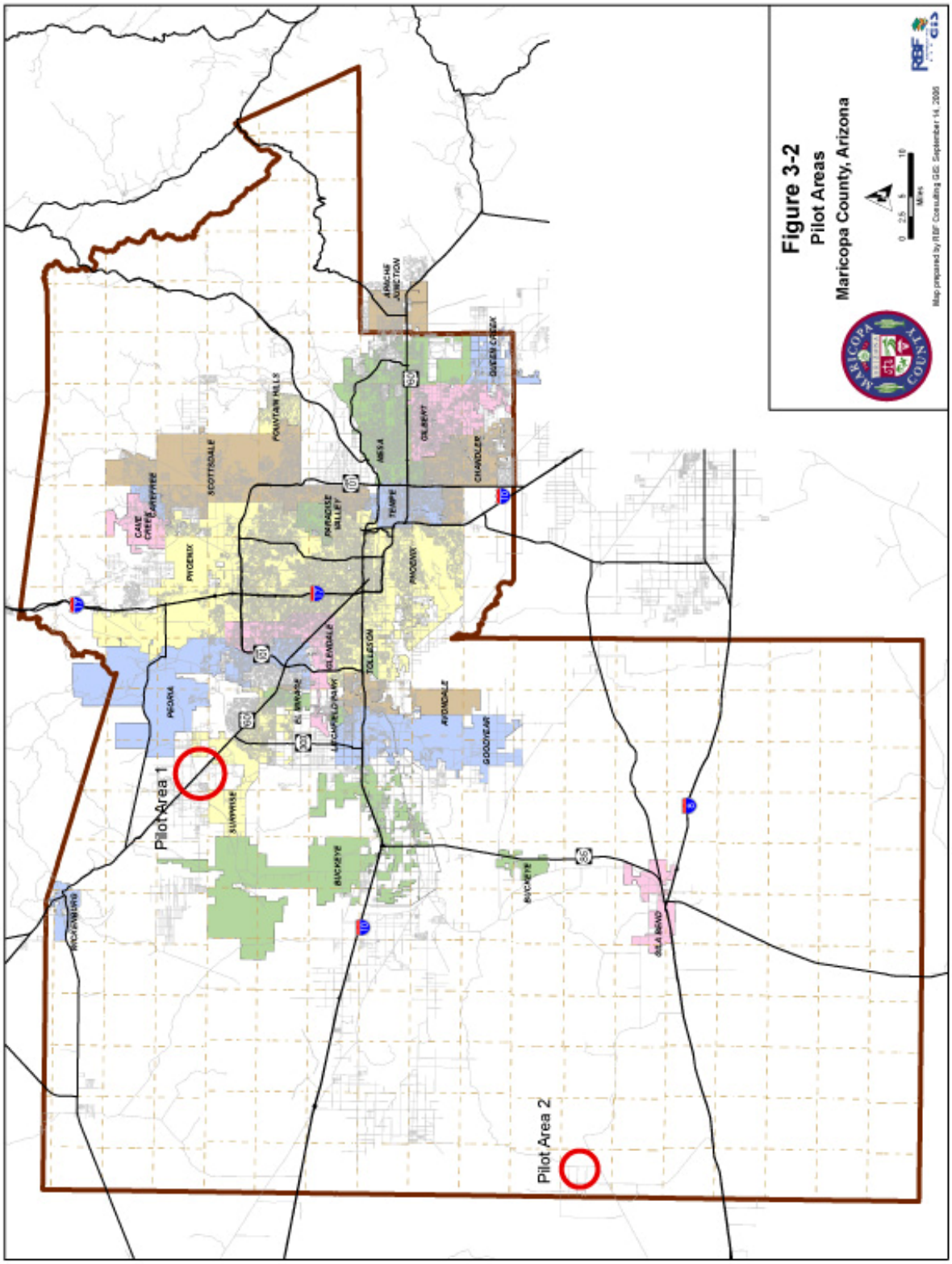
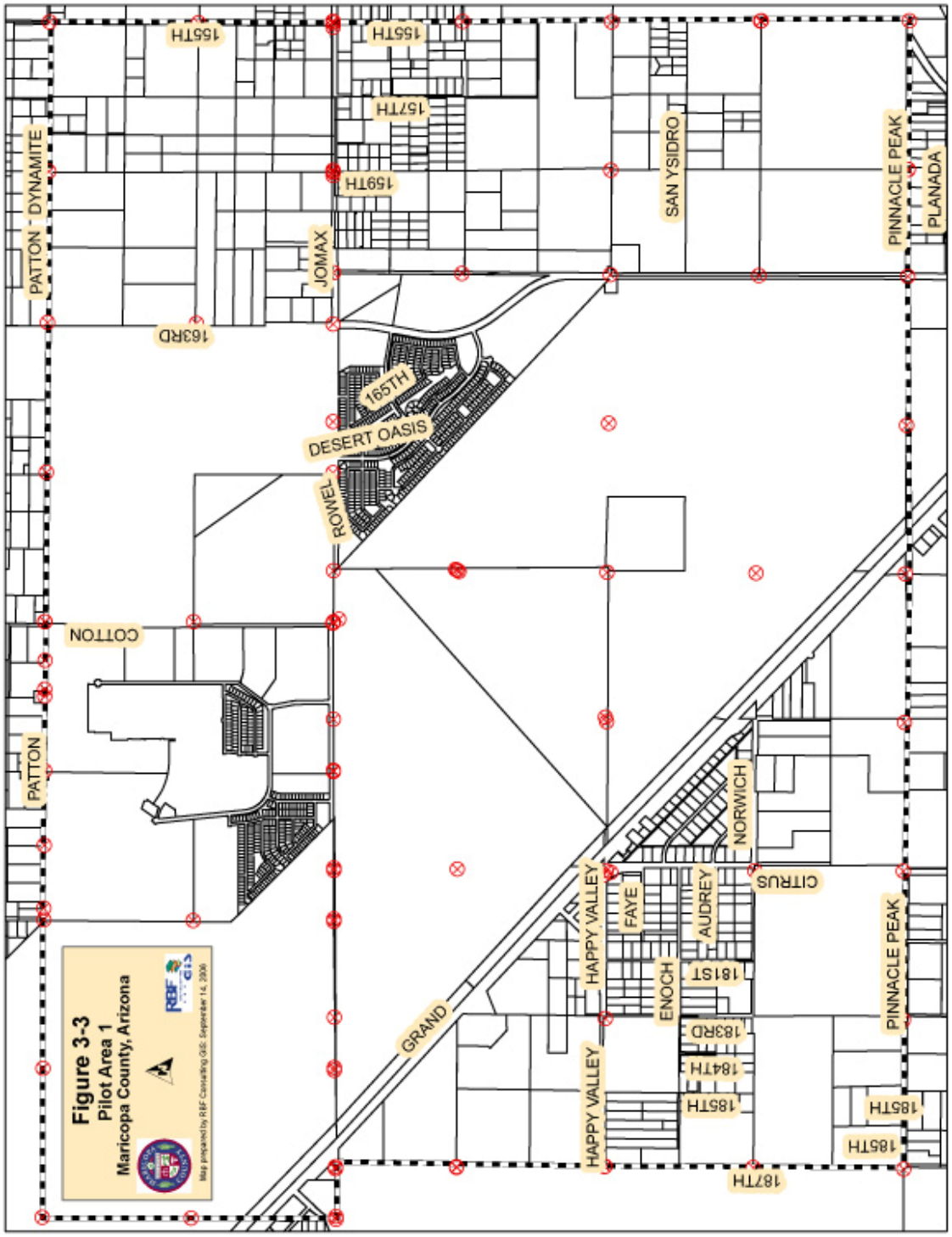


EXHIBIT – 7
Pilot Area #1 Detail



06142-RFP GDACS - GEOSPATIAL ADJUSTMENT PROJECT
Mandatory Pre Proposal Meeting
3rd Floor Assessors Training Room

Please leave your business card(s)

10:00 AM FEBRUARY 15th, 2007

Please print

Vendor Name	Attendee Signature	Phone Number	Fax Number	E-Mail Address
RBF	Steve Ries	602/467-2200	602/467-2201	SRIES@RBF.com
GISTiC	g/l	602 570 - 4697	480-456-8848	bo.guo@gisticinc.com
Baker Eng	Doug Plasencia	602.279.1234		dplasencia ~~dplasencia~~@mbakercorp.com
"	Gary Matthews	602.279.1234.		gmatthews@mbakercorp.com.
Monica Staats	[signature]	506-3549	—	staatsm@mail.maricopa.go
GIS Southwest, Inc.	BJ Raval	(602) 864-1928 x101	(602) 864-1908	braval@gisglobal.com
~~PHIL PONCE~~				
EMS, INC	Phil Ponce	602-870-7811	602-870-7812	phil@emsol.com

By signing one of these attendance sheets for this pre-bid meeting, I/we hereby acknowledge I/we will monitor the Maricopa County Materials Management web page (http://www.maricopa.gov/materials/advbd/advbd.asp) for all addenda that may be posted for this Request for Proposal. I/we will then be responsibile for downloading these addenda on own accord. I/we hereby acknowledge I/we will be responsible for returning all signed addenda acknowlegment(s) with my/our respective company's proposal as indicated on the "Notice of Solicitation" page. I/we also acknowledge I/we have read and thoroughly understand the Request for Proposal administrative information, contract terms, all specifications and draft contract that is posted to the Maricopa County Materials Management web page. http://www.maricopa.gov/materials/advbd/advbd.asp

06142-RFP GDACS - GEOSPATIAL ADJUSTMENT PROJECT
Mandatory Pre Proposal Meeting
3rd Floor Assessors Training Room

Please leave your business card(s)

10:00 AM FEBRUARY 15th, 2007

Please print

Vendor Name	Attendee Signature	Phone Number	Fax Number	E-Mail Address
Pinnacle Mapping Technologies Inc.		505-263-6701	317-585-2014	bgray@pinnaclemapping.com
CIBER, INC.		(225) 922 4373		jtalley@ciber.com
Weston Solutions Inc.		510-808-0304	510-225-3980	darrin.farmer@westonsolutions
Smart Data Strategies		615-794-5280	615-794-5310	Smarlow@SDS-INC.COM
ARCADIS U.S. INC		602-659-3239	602-438-0102	Roland.Michaud@ARCADIS-US
EMS		602 870 7811	602 7812	ruby.stricklen@emsol.com
Arcadis		602 659 3269	602 4380102	joseph.gregory@arcadis-us.com
SANBORN		719 649 3821	719 528 5093	SCALDWELL@SANBORN.COM
DATA ENHANCEMENT SVCS		301-717-1077	301-564-0517	bcatalinotto@gisdes.com
AMEC		623-203-0945	480-785-0970	brian.Savik@Amec.com
PIXXURES		303-302-8565	303-302-8601	wluck@pixxures.com
Pixxures		303-302-8542	303-302-8601	Zpostolovski@pixxures.com
PSOMAS		602-222-8260		cpyle@psomas.com

By signing one of these attendance sheets for this pre-bid meeting, I/we hereby acknowledge I/we will monitor the Maricopa County Materials Management web page (http://www.maricopa.gov/materials/advbd/advbd.asp) for all addenda that may be posted for this Request for Proposal. I/we will then be responsibile for downloading these addenda on own accord. I/we hereby acknowledge I/we will be responsible for returning all signed addenda acknowlegment(s) with my/our respective company's proposal as indicated on the "Notice of Solicitation" page. I/we also acknowledge I/we have read and thoroughly understand the Request for Proposal administrative information, contract terms, all specifications and draft contract that is posted to the Maricopa County Materials Management web page. http://www.maricopa.gov/materials/advbd/advbd.asp

Engineering Mapping Solutions

GIS Consulting Since 1995

Rudy Stricklan R.L.S.
Business Development Manager, Geospatial Technologies

Engineering Mapping Solutions, Inc.
2330 West Mission Lane, Suite 1
Phoenix, AZ 85021

Phone 602.870.7811 x 12
Fax 602.870.7812
Cell 602.618.9338

Rudy.Stricklan@emsol.com

www.emsol.com

DES
Data Enhancement Services, LLC

The Conflation Experts

Bernard Catalinotto
President

6001 Henning St.
Bethesda, MD 20817
phone (301) 717-1077
fax (301) 564-0517

bcatalinotto@gisdes.com
www.gisdes.com

Baker

Gary Matthews
GIS Team Leader

Michael Baker Jr., Inc.
2929 North Central Avenue
Suite 800
Phoenix, AZ 85012

Ph: 602.279.1234
Direct: 602.798.7566
Fax: 602.279.1411
gmatthews@mbakercorp.com
www.mbakercorp.com

ChallengeUs.

GIS SOUTHWEST

BJ Raval, AICP
Executive Vice President

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Phoenix, Arizona 85021
Phone: 602 864-1928
Fax: 602 864-1908
E-Mail: braval@gisglobal.com

e smarlow@sds-inc.com
t 615 794 5280
f 615 794 5310
corporate 888 384 6214

Susan Marlow
Founder / CEO

s d s
SMART DATA STRATEGIES

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www.sds-inc.com

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MAPPING TECHNOLOGIES, INC.

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Bob Gray
Regional Business Development Manager

5019 Brook Place NE
Albuquerque, NM 87113

phone: 505-856-2402
fax: 317-585-2014
cell: 505-263-6701

email: bgray@pinnaclemapping.com

WESTON SOLUTIONS
Restoring Resource Efficiency

DARRIN FARMER
CLIENT SERVICES MANAGER

Weston Solutions, Inc.
Suite 908
1440 Broadway
Oakland, CA 94612-2028

510-808-0304
fax: 510-891-9710
darrin.farmer@westonsolutions.com
www.ks2.net
www.westonsolutions.com

an employee-owned company

GISTIC Research, Inc.

Bo Guo, Ph.D., PE
President

401 W McNair St
Chandler, AZ 85225

tel: 602-570-4697
fax: 480-456-8848

e-mail: bo.guo@gisticinc.com
web: www.gisticinc.com

amec

Brian R Sovik GISP
GIS Manager
Earth & Environmental

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Cell (623) 203-0949
Fax (480) 785-0970
brian.sovik@amec.com

www.amec.com

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Ray Postolovski
Business Development Manager

15000 West 64th Ave.
Arvada, CO 80007
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303.302.8542 direct
303.302.8601 fax
303.253.5032 cell
rpostolovski@pixxures.com
www.pixxures.com

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Colorado Springs, CO 80920
Tel: 719.264.5547
Fax: 719.528.5093
Mobile: 719.649.3821
jcaldwell@sanborn.com
www.sanborn.com

SANBORN

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Regional Manager

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Senior Program Manager

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303.302.8601 fax
303.517.9578 cell
wluck@pixxures.com
www.pixxures.com

ARCADIS
Infrastructure, environment, facilities

JOE GREGORY
Geospatial Analyst

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8222 South 48th Street, Suite 140
Phoenix, Arizona 85044
Tel 602.438.0883 Fax 602.438.0102
Direct 602.659.3269
Email jagregory@arcadis-us.com

ARCADIS
Infrastructure, environment, facilities

ROLAND MICHAUD
Arizona Survey Manager

ARCADIS G&M, Inc.
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Phoenix, Arizona 85044
Tel 602.438.0883 Fax 602.438.0102
Direct 602.659.3239 Cell 480.287.2481
Email rmichaud@arcadis-us.com

Maricopa County, AZ
GDACS – Geospatial Adjustment Project

1. Since the adjusted data have to be approved by all participating departments, how will the responses and feedback to the vendor be coordinated? Timeliness of feedback and acceptance is important.

   There are two County Departments having data adjusted, Assessor's and Planning and Development. These two will be responsible for their respective approval/disapproval of the data. According to the Scope of Work (SOW), one week is given to QA/QC the data. Upon final negotiations, it is anticipated that the vendor and the County will agree upon the appropriate communiqués and medium (spread sheet, database, web site, etc.) to convey acceptance or rejections.

2. Is it intended that all of the layers needing adjustment will be adjusted to the 2006 orthos and the GDACS or will some layers need to be adjusted to some other target data?

   All layers will be adjusted using GDACS and the most recent available ortho aerials. It is anticipated that the 2007 aerials will be available for most areas. It is also expected that some more remote areas may only have older aerials available. Some areas do not have GDACS points and will have to be adjusted entirely to the aerials.

   Per the scope of work, the target data to be used for adjusting the annexation polygons will be a copy of the original annexation ordinance with legal descriptions and/or accompanying map.

   Zoning case polygons were created using legal descriptions and or site plans, but we have retained only a copy of the final Zoning Case map without legal description. Any adjustment to the current zoning case layer would be a visual adjustment using Ortho photos, the case map itself and/or parcel data. A copy of the case map will be available to the vendor.

3. Can you clarify the current spatial relationship of the layers needing adjustment to each other and to the parcel layer? Was the parcel layer the foundation for creating the other layers, if so what layers?

   Annexations use a two-method approach when it comes to creating the polygons, due to the fact that jurisdictions use non-standard methods to describe what they are annexing. If the annexation ordinance has an accompanying map that depicts the annexation to be just a parcel, we use the parcel geometry to create the annexation polygon. If the annexation ordinance does not have an accompanying map; just a legal description, then we use the GDACS section corners as our base and apply the legal description. Zoning case data was created using a submitted site plan map that may or may not have had an accompanying legal description.

4. Why is it preferred that the vendor adjust the parcel data a section at a time? Can we adjust larger "blocks" of data at one time? This would reduce the edge-matching requirements.

   It will be up to the vendor to present their best practice or method in their presentation. The preference is based on an estimate of the county staff's ability to maintain it's normal workflow and perform QA/QC for this project. If the vendor can substantiate a better, more efficient approach, we will consider it. Also, it tends to minimize the number of files "locked out" from the daily production flow for the Assessor's Office. It was found to be a convenient, manageable size for both the county and the vendor that drafted the SOW.

5. Who will be responsible for tying the "blocks" of adjusted data back into a whole layer?

   For the parcel layer the Assessor's Office currently assembles the blocks into a composite GIS parcel layer. The vendor is responsible for edge-matching the CAD files and adjusting the CAD files to GDACS points and the aerials.

6. If the vendor will only receive a few blocks of data at one time, will they be spatially sequential (i.e. next to each other) so we can tie them to the previously adjusted blocks? How will QC time affect the ability to edge-match one block to the next?

   Yes, the vendor will receive blocks of 50 CAD files that are sequential to the previous set of files. It will be the vendor's responsibility to edge match the latest set of files to the previous set. Each block will also touch areas that are being QC'ed and some that have already been accepted. The vendor and the county will have to establish procedures to resolve this issue.

7. Are the CAD drawings needing adjustment going to be adjusted and returned as individual files or will one separate new layer be created from them after adjustment?

   The CAD files must be returned as individual files. The GIS shape files may be returned as a layer, preferably by Assessor Book series.

8. Are there any new layers or digitizing to be done as part of this proposal?

   None from the Assessor's Office.

9. To meet the surveyor requirement, what level of qualifications must this person have and do they have to be on staff or can they be contracted for the project?

   This person must be a registered, licensed and practicing land surveyor. The person does not have to be a staff member, she/he may be contracted.

10. Please confirm that using offshore labor is acceptable to the County.

    There have been no restrictions determined in this regard. Intention to do so must be disclosed in your RFP proposal.

11. Please confirm that the requirement for a performance bond has been deleted.

    Performance Bond language was removed in Addendum #2

12. Please reference Section 1.4 bullet item #2; by 'Snap' do you mean the end result is that a location in the parcels and GDACS layers will have the same coordinates or do you mean something else – if so please explain?

    Yes, the section (quarter corner if applicable) corners of the CAD files should coincide with the GDACS point-coordinates.

13. Please note Section 2.5, bullet item #9 – 'Check curves have not been stroked or segmented.' Please clarify what is meant by this.

We are expecting to have true arcs within the CAD files. Often GIS software segments arcs into many arcs with very short lines. During our QC process using GeoMedia, these segments will often create an invalid polygon topology. It also causes the files size to increase drastically.

14. How large, in square miles is the unincorporated County?

Unincorporated County Island: 344 square miles
Incorporated Maricopa County: 1,942 square miles
Total Maricopa County: 9,223 square miles

15. Are the 7 remaining layers correctly positioned relative to the parcel layer in such a way that when the parcel layer is adjusted to its correct location the other layers arrive at their correct location?

Those other layers were previously adjusted using a different approach and methods. Those layers are anticipated to be in very close relation (adjustment wise) to the parcel base upon completion of this project.

16. If the control provided (GDACS & Ortho) disagree, which takes precedence. Describe how this is resolved.

The GDACS will hold precedence where corner monumentation is good. In areas lacking GDACS, or has the minimum of GDACS (inventory) points, the aerials may be used for the parcel adjustments.

17. Provide the CAD standards (layers and symbology) to be followed for Microstation V8 deliverables. During the pre-bid meeting, it was stated that this information was available on-line. Please provide a URL or directions on obtaining this information.

The site is : **http://www.maricopa.gov/Assessor/GIS/Cadlevels.aspx**

18. Do MicroStation design files (DGN) require any linking to external databases (attribute tags or cells)? Can the sample design files be provided?

No, the CAD files do not require linking to a database, no TAGS or CELLS. Yes. We will provide samples of all data files that will be adjusted or needed to adjust the files.

19. Is coordinate transformation required for any exiting dataset/layer?

Our current coordinate project for the parcels is in Arizona State Plane NAD 83, Central Zone, US Feet. This will need to be projected to International Feet.

20. Can you provide estimated number of features by layer that may need adjustment?

    There are approximately: 1.5 million parcels with annotation contained in approximately 2,700 CAD files; 3,000 MAP ID grids; 400 special district boundaries; 3,300 city annexation boundaries; 5,000 zoning polygons.

21. RFP-Section 2.2- Layer Adjustment Priorities (http://www.maricopa.gov/Assessor/GIS/map.html), the referenced GIS portal shows some additional layers like parcels (2 floor) and subdivision lines as a separate layer apart from polygons. Are these layers also required adjustments and what attribute information need to be retained?

    Yes, the multi-floor buildings are represented with a separate CAD file for each floor. Each upper and lower level file will need to be adjusted to the ground level CAD file and GDACS. Using the information in our CAD standard the Assessor's Office will extract and build the GIS layers for the upper levels and subdivisions.

22. Please refer to the RFP-Section 2.1-Table 3-1, the table lists the format deliverables. The ESRI shape file format does not support annotation (text) data. We can place point features for annotation and then label them automatically but may require manual work for making the labels look good (cartographically). Can you provide more details on how they would like to see the text in shape files or discuss with Keith on any ideas he may have.

    The annotation within the CAD files will need to be placed correctly and pleasing from a cartographic standpoint. Within the GIS environment, there is no annotation to contend with. The Assessor's staff can populate annotation from the CAD environment as needed.

23. What adjustments are required to data in rural areas where the ortho imagery is not available?

    We have some type of imagery for 99.99% of all our parcels as part of the proposal, it will be the vendor's responsibility to propose their best solution and methods in areas that lack an abundance of GDACS or aerial reference materials.

24. Can we get some sample data to perform adjustments for estimation purposes? May be for one section or quarter-quarter.

    Yes, the County does plan to release sample data as soon as arrangements can be made with Materials Management for access to their FTP site. This is anticipated Monday, Feb. 26th.

25. Attachments A, B, and C; and Exhibit 2 - Can the County provide these forms in a file format that enables us to complete them electronically, such as Word or Excel?

    Native File Formats are available for download at our website www.maricopa.gov/materials. They are listed under the applicable Solicitation and available in the ZIP file.